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Thomas James Distinguished Professor of Experiential Learning
University of North Carolina at Chapel Hill
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EDUCATION

- 1999-2003 University of South Florida, Department of Secondary Education, College of Education (Tampa, FL). **Ph.D.** in Curriculum & Instruction with an emphasis in Science Education.
Dissertation: Informal reasoning regarding socioscientific issues: The influence of morality and content knowledge. (Dissertation Chair: Dr. Dana Zeidler)
- 1997-1998 Harvard University, Department of Organismic and Evolutionary Biology, College of Arts & Sciences (Cambridge, MA). Graduate studies in biology.
- 1996-1997 University of Florida, Department of Curriculum and Instruction, College of Education (Gainesville, FL). **M.Ed.** in Science Education.
- 1991-1994 University of Miami, College of Arts & Sciences (Coral Gables, FL). **B.S.** Magna cum Laude; Major: Biology; Minor: Chemistry.

PROFESSIONAL EXPERIENCE

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

2019- *Professor of Education*, School of Education

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

2018-2019 *Associate Dean of Research*, School of Education

2017-2019 *Professor of Education*, Department of Teacher Education and Higher Education, School of Education

2017 *Special Assistant to the Dean for Research Advancement*, School of Education

UNIVERSITY OF MISSOURI

2011-2018 *Professor of Science Education*, jointly appointed in the Department of Learning, Teaching & Curriculum, College of Education, and the Division of Biological Sciences, College of Arts and Sciences

2013-2018 *Director*, The ReSTEM Institute: Reimagining & Researching STEM Education (an interdisciplinary STEM education research, outreach, and evaluation center), College of Education

2011-2014 *Director*, MU Science Education Center, College of Education

UNIVERSITY OF FLORIDA

- 2009-2011 *Associate Professor of Science Education*, School of Teaching & Learning, College of Education
- 2005-2009 *Assistant Professor of Science Education*, School of Teaching & Learning, College of Education

INDIANA UNIVERSITY BLOOMINGTON

- 2003-2005 *Assistant Professor of Science Education*, Department of Curriculum & Instruction, School of Education

UNIVERSITY OF SOUTH FLORIDA

- 2002-2003 *Graduate Teaching Associate*, Department of Secondary Education, College of Education
- 2001-2002 *Graduate Research Assistant*, David C. Anchin Center, College of Education

SECONDARY SCHOOLS

- 1999-2001 *Teacher* (Biology & Earth Science), Northeast High School, St. Petersburg, FL
- 1998-1999 *Teacher* (Biology & Biotechnology), Gainesville High School, Gainesville, FL
- 1996-1997 *Student Teacher* (Biology), Buchholz High School, Gainesville, FL
- 1995-1996 *Teacher* (Science & Mathematics), OLA Middle School, Tarpon Springs, FL

PROFESSIONAL HONORS & AWARDS

- 2019 Thomas James Distinguished Professor of Science Education, University of North Carolina at Chapel Hill
- 2015 Invited Presenter, National Academies of Science Convocation on Integrating Discovery-Based Research into the Undergraduate Curriculum
- 2015-2019 Associate Editor, *Journal of Research in Science Teaching*
- 2010-2015 *The Books* Section Editor, *Science Education*
- 2009 Early Career Research Award, National Association for Research in Science Teaching
- 2008-2011 Board of Directors, National Association for Research in Science Teaching
- 2008 *Cultural Studies of Science Education* Distinguished Paper Award
- 2006 *Journal of Research in Science Teaching* Award, National Association for Research in Science Teaching
- 2005 Trustees' Faculty Teaching Award, Indiana University
- 2003 Provost's Commendation for Outstanding Teaching by a Graduate Teaching Assistant, University of South Florida
- 2002 Eddie Griffin Memorial Award for the Outstanding Position Paper by a Graduate Student, Southeastern Association for the Education of Teachers in Science

- 1998 National Science Foundation Predoctoral Fellowship (Awarded but not accepted)
- 1995 Department of Biology Outstanding Graduate, University of Miami
- 1994 Phi Beta Kappa, University of Miami

PUBLICATIONS: REFEREED JOURNAL ARTICLES (* Student collaborator; ^Postdoc collaborator)

- Hancock, T. S.*, Friedrichsen, P. J., Kinslow, A. T.*, & Sadler, T. D. (in press). Selecting socio-scientific issues for teaching: A grounded theory study of how science teachers collaboratively design SSI-based curricula. *Science & Education*.
- Sadler, T. D., Friedrichsen, P., & Zangori, L. (in press). A framework for teaching for socio-scientific issue and model based learning (SIMBL). *Educação e Fronteiras/Education and Borders*.
- Zeidler, D. L., Herman, B., & Sadler, T. D. (in press). New directions in socioscientific issues research. *Disciplinary and Interdisciplinary Science Education Research*.
- Peel, A.*, Sadler, T. D., Friedrichsen, P. J. (2019). Learning natural selection through computational thinking: Unplugged design of algorithmic explanations. *Journal of Research in Science Teaching*. DOI: 10.1002/tea.21545
- Peel, A. *, Zangori, L., Friedrichsen, P., Hayes, E.* & Sadler, T. (2019). Students' model-based explanations about natural selection and antibiotic resistance through socio-scientific issues based learning. *International Journal of Science Education*, 41, 510-532. DOI: 10.1080/09500693.2018.1564084
- Owens, D. C.^, Herman, B. C., Oertli, T.*, Lannin, A., & Sadler, T. D. (2019). Secondary science and mathematics teachers' environmental issues engagement through socioscientific reasoning. *EURASIA Journal of Mathematics, Science and Technology Education*. 15(4), em1693. DOI: 10.29333/ejmste/103561
- Owens, D. C.^, Sadler, T. D., & Friedrichsen, P. (in press). Teaching practices for enactment of socio-scientific issues instruction: An instrumental case study of an experienced biology teacher. *Research in Science Education*.
- Owens, D. C.^, Sadler, T. D., Murakami, C., & Tsai, C.-L. (2018). Teacher views on and preferences for meeting their professional development needs in STEM. *School Science and Mathematics*, 118, 370-384. DOI: 10.1111/ssm.12306
- Kinslow, A. T.*, Sadler, T. D., & Nguyen, H.* (in press). Socio-scientific reasoning and environmental literacy in a field-based ecology class. *Environmental Education Research*. DOI: 10.1080/13504622.2018.1442418
- Owens, D. C.^, Sadler, T. D., Smith-Walters, C., & Barlow, A. B. (in press). Student motivation from and resistance to active learning rooted in essential science practices. *Research in Science Education*. DOI: 10.1007/s11165-017-9688-1
- Kinslow, A. T.*, & Sadler, T. D. (2018). Making science relevant: Using socio-scientific issues to foster critical thinking. *The Science Teacher*, 86(1), 40-45.

- Zangori, L., Foulk, J. A.*, Sadler, T. D., & Peel, A.* (2018). Exploring elementary teachers' perceptions and characterizations of model-oriented issue-based (MOIB) teaching. *Journal of Science Teacher Education*, 29, 555-577. DOI: 10.1080/1046560X.2018.1482173
- Pitiporntapin, S.^, Yutakom, N., Sadler, T. D., & Hines, L. (2018). Enhancing pre-service science teachers' understandings and practices of socio-scientific issues (SSI)-based teaching via online mentoring. *Asian Social Science*, 14(5), 1-13. DOI: 10.5539/ass.v14n5p1
- Peel, A.*, Sadler, T. D., Friedrichsen, P., Foulk, J. A.*, & Kinslow, A. T.* (2018). Rigorous investigations of relevant issues: A professional development program for supporting teacher design of socio-scientific issue units. *Innovations in Science Teacher Education*, 3(3). Retrieved from <http://innovations.aste.org/?p=3026>
- Menon, D.*, & Sadler, T. D. (2018). Sources of science self-efficacy for preservice elementary teachers in science content courses. *International Journal of Science and Mathematics Education*, 16, 835-855. DOI:10.1007/s10763-017-9813-7
- Williams, M.*, Friedrichsen, P., Sadler, T. D., Brown, P. (2018). Modeling the emergence of antibiotic resistance in bacterial populations. *American Biology Teacher*, 80(3), 214-220. DOI: 10.1525/abt.2018.80.3.214
- Topcu, M. S., Foulk, J. A.*, Sadler, T. D., Pitiporntapin, S.^, & Atabey, N.* (2018). The classroom observation protocol for socioscientific issue-based instruction: Development and implementation of a new research tool. *Research in Science and Technological Education*, 36, 302-323. DOI: 10.1080/02635143.2017.1399353
- Zangori, L., Peel, A.*, Kinslow, A.*, Friedrichsen, P., & Sadler, T. D. (2017). Student development of model-based reasoning about carbon cycling and climate change in a socio-scientific issues unit. *Journal of Research in Science Teaching*, 10, 1249-1273. DOI: 10.1002/tea.2104 (Recognized as "Research Worth Reading" by NARST)
- Owens, D. C.^, Sadler, T. D., & Zeidler, D. L. (2017). Controversial issues in the science classroom. *Phi Delta Kappan*, 99(4), 45-49.
- Kinslow, A. T.*, Sadler, T. D., Friedrichsen, P., Zangori, L., Peel, A.*, & Graham, K. (2017). From global to local: Connecting global climate change to a local ecosystem using a socio-scientific issue approach. *The Science Teacher*, 84(7), 39-46.
- Romine, W., Sadler, T. D., & Wulff, E.* (2017). Conceptualizing student affect for science and technology at the middle school level: Development and implementation of a Measure of Affect in Science and Technology (MAST). *Journal of Science Education and Technology*, 26, 534-545. DOI: 10.1007/s10956-017-9697-x
- Oliveira, A. W., Sadler, T. D., & Nash, C. M. (2017). Socioscientific intertextuality: A text-based framework for environmental and science education. *Educational Review*, 5(2), 23-25.
- Sadler, T. D., Foulk, J. A.*, & Friedrichsen, P. J. (2017). Evolution of a model for socio-scientific issue teaching and learning. *International Journal of Education in Mathematics, Science and Technology*, 5(1), 75-87. DOI:10.18404/ijemst.55999

- Romine, W. L., Sadler, T. D., & Kinslow, A. T.* (2017). Assessment of scientific literacy: Development and validation of the quantitative assessment of socio-scientific reasoning (QuASSR). *Journal of Research in Science Teaching*, 54, 274-295
DOI:10.1002/tea.21368 (Identified as a "Featured Article" by the National Association of Geoscience Teachers' Geoscience Education Research Exchange)
- Sadler, T. D., Nguyen, H.*, & Lankford, D. (2017). Water systems understandings: A framework for designing instruction and considering what learners know about water. *WIREs Water*, 4(1), e1178 DOI: 10.1002/wat2.1178
- Sadler, T. D., Romine, W. L., & Topcu, M. S. (2016). Learning science content through socio-scientific issues based instruction: A multi-level assessment study. *International Journal of Science Education*, 38, 1622-1635. DOI: 10.1080/09500693.2016.1204481
- Pitiporntapin, S.^, Yutakom, N., & Sadler, T. D. (2016). Thai pre-service teachers' struggles in using socio-scientific issue during practicum. *Asia-Pacific Forum on Science Learning and Teaching*, 17(2).
- Menon, D.*, & Sadler, T. D. (2016). Preservice elementary teachers' science self-efficacy beliefs and science content knowledge. *Journal of Science Teacher Education*, 27, 649-673. DOI: 10.1007/s10972-016-9479-y
- Friedrichsen, P., Sadler, T. D., Graham, K., & Brown, P. (2016). Design of a socio-scientific issue curriculum unit: Antibiotic resistance, natural selection, and modeling. *International Journal of Designs for Learning*, 7(1), 1-18.
- Burgin, S. R.*, & Sadler, T. D. (2016). Learning nature of science concepts through a research apprenticeship program: A comparative study of three approaches. *Journal of Research in Science Teaching*, 53, 31-59. DOI: 10.1002/tea.21296
- Romine, W., & Sadler, T. D. (2016). Measuring changes in interest in science and technology at the college level in response to two instructional interventions. *Research in Science Education*, 46:309-327. DOI: 10.1007/s11165-014-9452-8
- Pitiporntapin, S.^, & Sadler, T. D. (2015). Pre-service science teachers' perceptions and practices of socioscientific issue-based teaching. *Journal of Science and Mathematics Education in Southeast Asia*, 38, 102-125.
- Sadler, T. D., Romine, W. L., Menon, D.*, Ferdig, R. E., & Annetta, L. (2015). Learning biology through innovative curricula: A comparison of game- and nongame-based approaches. *Science Education*, 99, 696-720. DOI: 10.1002/sce.21171
- Kazempour, M., & Sadler, T. D. (2015). Pre-service teachers' beliefs, attitudes, and self-efficacy: A multi-case study. *Teaching Education*, 26, 247-271.
DOI: 10.1080/10476210.2014.996743
- Oliveira, A. W., Boz, U., Broadwell, G. A., & Sadler, T. D. (2014). Student leadership in small group science inquiry. *Research in Science and Technological Education*, 32, 281-297.
DOI: 10.1080/02635143.2014.942621

- Sadler, T. D., & Murakami, C. D.* (2014). Socio-scientific issues based teaching and learning: Hydrofracturing as an illustrative context of a framework for implementation and research. *Brazilian Journal of Research in Science Education*, 14(2), 331-342.
- Lamb, R.*, Annetta, L., Vallet, D.*, & Sadler, T. D. (2014). Cognitive diagnostics using serious educational video games. *Computers and Education*, 70, 92-104. DOI: 10.1016/j.compedu.2013.08.008
- Romine, W., Sadler, T. D., Presley, M.*, & Klosterman, M. L. (2014). Student Interest in Technology and Science (SITS) Survey: Development, validation and use of a new instrument. *International Journal of Science and Mathematics Education*, 12, 261-283. DOI: 10.1007/s10763-013-9410-3
- Murakami, C. D.*, Cite, S.*, Schaffer, D. L.*, & Sadler, T. D. (2014). Where does the plastic go? Using socio-scientific issues in the classroom to study plastic pollution in the ocean and the physical properties of plastics. *Green Teacher*, 102, 27-30.
- Presley, M. L.*, Sickel, A. J.*, Muslu, N.*, Merle-Johnson, D.*, Witzig, S. B.*, Izci, K.*, & Sadler, T. D. (2013). A framework for socio-scientific issues based education. *Science Educator*, 22, 26-32.
- Sadler, T. D., Romine, W., Stuart, P. E.*, & Merle-Johnson, D.* (2013). Game-based curricula in biology classes: Differential effects among varying academic levels. *Journal of Research in Science Teaching*, 50, 479-499. DOI 10.1002/tea.21085 (Recognized as "Research Worth Reading" by the National Science Teachers Association; Abstract reprinted: *Science Scope*)
- Eastwood, J. L.^, & Sadler, T. D. (2013). Teachers' implementation of a game-based biotechnology curriculum. *Computers and Education*, 66, 11-24. DOI: 10.1016/j.compedu.2013.02.003
- Burgin, S.R.*, & Sadler, T. D. (2013). Consistency of practical and formal epistemologies held by participants of a research apprenticeship. *Research in Science Education*, 21, 2179-2206. DOI: 10.1007/s11165-013-9351-4
- Barko, T.*, & Sadler, T. D. (2013). Learning outcomes associated with classroom implementation of a biotechnology-themed video game. *American Biology Teacher*, 75, 30-34.
- Nelson, F. L.*, & Sadler, T. D. (2013). A third space for reflection in teacher education programs: A heuristic for understanding orientations to and components of reflection. *Reflective Practice*, 14, 43-57. DOI: 10.1080/14623943.2012.732946
- Barko, T.*, & Sadler, T. D. (2013). Practicality in virtuality: Finding student meaning in video game education. *Journal of Science Education and Technology*, 22, 124-132. DOI: 10.1007/s10956-012-9381-0
- Eastwood, J. L.^, Sadler, T. D., Sherwood, R., & Schlegel, W. M. (2013). Students' participation in an interdisciplinary, socioscientific issues based undergraduate human biology major and their understanding of scientific inquiry. *Research in Science Education*, 43, 1051-1078. DOI: 10.1007/s11165-02-9298

- Borgerding, L. A., Sadler, T. D., & Koroly, M. J. (2013). Teacher concerns about biotechnology education. *Journal of Science Education and Technology*, 22, 133-147. DOI: 10.1007/s10956-012-9382-z
- Burgin, S. R.*, & Sadler, T. D. (2013). Science immersion: Summer programs that expose students to authentic scientific research. *The Science Teacher*, 80(4), 44-49.
- Eastwood, J. L.^, Sadler, T. D., Zeidler, D. L., Lewis, A., Amiri, L.*, & Applebaum, S. (2012). Contextualizing nature of science instruction in socioscientific issues. *International Journal of Science Education*, 34, 2289-2315. DOI: 10.1080/09500693.2012.667582
- Burgin, S.*, Sadler, T. D., & Koroly, M. J. (2012). High school student participation in scientific research apprenticeships: Variation in and relationships among student experiences and outcomes. *Research in Science Education* 42, 439-467. DOI: 10.1007/s11165-010-9205
- Klosterman, M. L., Sadler, T.D, & Brown, J.* (2012). Science teachers' use of mass media to address socio-scientific issues and sustainability. *Research in Science Education*, 42, 51-74. DOI: 10.1007/s11165-011-9256
- Klosterman, M.L., Sadler, T.D., & Brown, J.* (2012). Viral news: Media literacy for the 21st Century. *Science Scope*, 35(9), 61-69.
- Sadler, T. D., Puig, A., Trutschel, B. K.* (2011). Laboratory instructional practices inventory (LIPi): A tool for assessing the transformation of undergraduate laboratory instruction. *Journal of College Science Teaching*, 41(1), 25-31.
- Echeverri, J. F.*, & Sadler, T. D. (2011). Gaming as a platform for the development of innovative problem-based learning opportunities. *Science Educator*, 20(1), 44-48.
- Topcu, M. S.*, Yilmaz-Tuzun, O., & Sadler, T. D. (2011). Preservice science teachers' informal reasoning regarding socioscientific issues and the factors influencing their informal reasoning. *Journal of Science Teacher Education*, 42, 51-74. DOI 10.1007/s10972-010-9221-0
- Barko, T.*, & Sadler, T.D. (2011). Teach your budding scientists to be gamers. *Learning and Leading with technology*, 39(3), 38-40.
- Burgin, S. R.*, & Sadler, T. D. (2010). Creating links between students' personal and global understandings of nature of science through research apprenticeships. *Journal of Kirsehir Education Faculty*, 11(4), 97-111.
- Topcu, M. S.*, Sadler, T. D., & Yilmaz-Tuzun, O. (2010). Preservice science teachers' informal reasoning about socioscientific issues: The influence of issue context. *International Journal of Science Education*, 32, 2475-2495.
- Sadler, T. D., & McKinney, L. L.* (2010). Scientific research for undergraduate students: A review of the literature. *Journal of College Science Teaching*, 39(5), 68-74.
- Klosterman, M. L.*, & Sadler, T. D. (2010). Multi-level assessment of scientific content knowledge gains associated with socioscientific issues based instruction. *International Journal of Science Education*, 32, 1017-1043.

- Sadler, T. D., Burgin, S.*, McKinney, L. L.*, & Ponjuan L. (2010). Learning science through research apprenticeships: A critical review of the literature. *Journal of Research in Science Teaching*, 47, 235-256.
- Post, J. R.*, & Sadler, T. D. (2010). Wolves in the wild: Using current issues to make science relevant. *The Science Teacher*, 77(9), 30-34.
- Sadler, T. D., & Zeidler, D. L. (2009). Scientific literacy, PISA, and socioscientific discourse: Assessment for progressive aims of science education. *Journal of Research in Science Teaching*, 46, 909-921.
- Donnelly, L. A., & Sadler, T. D. (2009). High school science teachers' views of standards and accountability. *Science Education*, 93, 1050-1075.
- Sadler, T. D. (2009). Situated learning in science education: Socio-scientific issues as contexts for practice. *Studies in Science Education*, 45, 1-42.
- Zeidler, D. L., Sadler, T. D., Applebaum, S.*, & Callahan, B. E.* (2009). Advancing reflective judgment through socioscientific issues. *Journal of Research in Science Teaching*, 46, 74-101. (Abstract reprinted: *Science Scope*, 32(9), 40; *The Science Teacher*, 76(5), 28; and *Journal of College Science Teaching*, 38(6), 44)
- Fowler, S. R.*, Zeidler, D. L., & Sadler, T. D. (2009). Moral sensitivity in the context of socioscientific issues in high school students. *International Journal of Science Education*, 31, 279-296.
- Sadler, T. D., & Klosterman, M. L.* (2009). Exploring the socio-political dimensions of global warming. *Science Activities*, 45(4), 9-12.
- Klosterman, M. L.*, & Sadler, T. D. (2008). Information literacy for science education: Evaluating web-based materials for socioscientific issues. *Science Scope*, 31(7), 18-21.
- Sadler, T. D., Barab, S. A., & Scott, B.* (2007). What do students gain by engaging in socioscientific inquiry? *Research in Science Education*, 37, 371-391.
- Oliveira, A. W.*, Sadler, T. D., Suslak, D. (2007). The linguistic construction of expert identity in professor-student discussions of science. *Cultural Studies of Science Education*, 2, 119-150. (Awarded the 2008 CSSE Distinguished Paper Award.)
- Barab, S. A., Sadler, T. D., Heiselt, C.*, Hickey, D., & Zuiker, S.* (2007). Relating narrative, inquiry, and inscriptions: Supporting consequential play. *Journal of Science Education and Technology*, 16, 59-82.
- Sadler, T. D. (2007). Data do not speak for themselves: The role of data in science controversies. *Science Activities*, 44, 113-116.
- Sadler, T. D., & Fowler, S.* (2006). A threshold model of content knowledge transfer for socioscientific argumentation. *Science Education*, 90, 986-1004.
- Sadler, T. D., & Donnelly, L. A.* (2006). Socioscientific argumentation: The effects of content knowledge and morality. *International Journal of Science Education*, 28, 1463-1488.

- Sadler, T. D., Amirshokoohi, A.*, Kazempour, M.*, & Allspaw, K. M.* (2006). Socioscience and ethics in science classrooms: Teacher perspectives and strategies. *Journal of Research in Science Teaching*, 43, 353-376.
- Sadler, T. D. (2006). Promoting discourse and argumentation in science teacher education. *Journal of Science Teacher Education*, 17, 323-346.
- Sadler, T. D. (2006). "I won't last three weeks:" Preservice science teachers reflect on their student teaching experiences. *Journal of Science Teacher Education*, 17, 217-241.
- Sadler, T. D., & Zeidler, D. L. (2005). Patterns of informal reasoning in the context of socioscientific decision-making. *Journal of Research in Science Teaching*, 42, 112-138. (Awarded the 2006 JRST Award by the National Association for Research in Science Teaching)
- Sadler, T. D. (2005). Evolutionary theory as a guide to socioscientific decision-making. *Journal of Biological Education*, 39, 68-72.
- Sadler, T. D., & Zeidler, D. L. (2005). The significance of content knowledge for informal reasoning regarding socioscientific issues: Applying genetics knowledge to genetic engineering issues. *Science Education*, 89, 71-93.
- Zeidler, D. L., Sadler, T. D., Simmons, M. L.*, & Howes, E. V. (2005). Beyond STS: A research-based framework for socioscientific issue education. *Science Education*, 89, 357-377.
- Sadler, T. D., Eckart, T. M.*, Lewis, J. E., & Whitley, K. M. (2005). It's a gas! An exploration of the physical nature of gases. *Science Scope*, 29(3), 12-14.
- Hanes, J. R.*, & Sadler, T. D. (2005). Inquiry in the community. *The Science Teacher*, 72(4), 42-43.
- Sadler, T. D. (2004). Moral sensitivity and its contribution to the resolution of socio-scientific issues. *Journal of Moral Education*, 33, 339-358.
- Sadler, T. D. (2004). Informal reasoning regarding socioscientific issues: A critical review of research. *Journal of Research in Science Teaching*, 41, 513-536.
- Sadler, T. D. (2004). Moral and ethical dimensions of socioscientific decision-making as integral components of scientific literacy. *The Science Educator*, 13, 39-48.
- Sadler, T. D., Chambers, F. W.*, & Zeidler, D. L. (2004). Student conceptualizations of the nature of science in response to a socioscientific issue. *International Journal of Science Education*, 26, 387-409.
- Sadler, T. D., & Zeidler, D. L. (2004). The morality of socioscientific issues: Construal and resolution of genetic engineering dilemmas. *Science Education*, 88, 4-27.
- Sadler, T. D., & Zeidler, D. L. (2004). Negotiating gene therapy controversies. *The American Biology Teacher*, 66, 428-433.
- Sadler, T. D., & Zeidler, D. L. (2003). Teaching bad science: Highlighting the past to understand the present. *The Science Teacher*, 70(9), 36-40.
- Zeidler, D. L., Sadler, T. D., Berson, M., & Fogleman, A. (2002). Bad science and its social consequences. *The Educational Forum*, 66, 134-146.

Spitze, K., & Sadler, T. D. (1996). Evolution of a generalist genotype: Multivariate analysis of the adaptiveness of phenotypic plasticity. *American Naturalist*, 148, S108-S123.

Sadler, T. D. & Spitze, K. (1995). Genetic variation in subtropical populations of *Simocephalus*. *Hereditas*, 123, 1-7.

PUBLICATIONS: INVITED JOURNAL ARTICLES

Sadler, T. D., & Brown, D. E. (2018). Introduction to the special issue: A critical examination of the Next Generation Science Standards. *Journal of Research in Science Teaching*, 55, 903-906.

Brown, D. E., & Sadler, T. D. (2018). Conceptual framing and instructional enactment of the Next Generation Science Standards: A synthesis of the contributions to the special issue. *Journal of Research in Science Teaching*, 55, 1101-1108.

Sadler, T. D. (2009). Socioscientific issues in science education: Labels, reasoning, and transfer. *Cultural Studies in Science Education*, 4, 697-703.

Zeidler, D. L., & Sadler, T. D. (2008). Social and ethical issues in science education: A prelude to action. *Science & Education*, 17, 799-803.

Oliveira, A.*, Sadler, T., & Suslak, D. (2007). Analyzing language, interaction and outcomes in an inquiry-oriented classroom. *Cultural Studies of Science Education*, 2, 165-170.

PUBLICATIONS: CONFERENCE PROCEEDINGS

Laffey, J. M., Griffin, J., Sigoloff, J., Lander, S., Sadler, T., Goggins, S., Kim, S. M., Wulff, E., & Womack, A. J. (2017). Mission HydroSci: A progress report on a transformational role playing game for science learning. *Proceedings of the 12th International Conference on the Foundations of Digital Games*. Hyannis, MA. DOI 10.1145/3102071.3106354.

Griffin, J., Kim, S. M., Sigoloff, J., Sadler, T. D., & Laffey, J. (2016). Designing scientific argumentation into Mission HydroSci. *Proceedings of the Games + Learning + Society Conference*. Madison, WI.

Laffey, J., Griffin, J., Babiuch, R., Sigoloff, J., Kim, S. M., Sadler, T. D., & Goggins, S. (2016). Mission HydroSci: A game-based 3D virtual learning environment for science education. *Proceedings of the 2016 Annual Conference of ED-MEDIA*. Vancouver, B.C., Canada.

Sadler, T. D. (2010). Socio-scientific issues as contexts for learning and practice in science education. *Proceedings of the Society for Didactics in Chemistry and Physics*.

PUBLICATIONS: MANUSCRIPTS UNDER REVIEW

Foulk, J. A., Sadler, T. D., & Friedrichsen, P. (in review). Facilitating Pre-Service Teachers' Socioscientific Issues Curriculum Design in Teacher Education. *Innovations in Science Teacher Education*.

- Peel, A.*, Sadler, T. D., Friedrichsen, P. J. (in review). Learning computational thinking through unplugged algorithmic explanations of natural selection. *Science Education*.
- Peel, A.*, Sadler, T. D., Friedrichsen, P. J. (in review). Using unplugged computational thinking to scaffold natural selection learning. *American Biology Teacher*.
- Peel, A.*, Sadler, T. D., Friedrichsen, P. J. (in revision). Unplugged design of algorithmic explanations: A framework for integrating computational thinking and science. *Journal of Science Education and Technology*.
- Sadler, T. D., Friedrichsen, P., Graham, K., Foulk, J. A.*, & Menon, D.* (in revision). Socio-scientific issue based education for three-dimensional science learning. *Journal of Science Education and Technology*.

PUBLICATIONS: BOOK CHAPTERS

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- Sadler, T. D. & Brown, D. E. (2017). Introduction to comments and criticisms in response to the Next Generation Science Standards special issue. *Journal of Research in Science Teaching*, 56, 516-17.
- Sadler, T. D., Murakami, C., Tsai, C.-L., McFarling, P., Owens, D. C., & Woodford-Thomas, T. (2018). *Professional development for Missouri's STEM teachers: A statewide needs assessment of K-12 STEM teachers*. Research report for the Missouri Transect: Climate, Plants and Community. Columbia, MO: University of Missouri (18 pp.).
- Sadler, T. D. (2018). *Summative evaluation report for the 2017 US/France international Research Experience for Undergraduates (REU) site*. (8 pp.).
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EXTERNALLY FUNDED GRANT PROJECTS

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- EI: Exploring the Integration of Computational Thinking into Preservice Elementary Science Teacher Education* (CT -> PSTE) (2017-2019). Funding Source: National Science Foundation (STEM + C). \$1,237,100 (\$128,842 subcontracts to MU/UNCG/UNC-CH). D. Ketelhut (PI); J. Plane, J. R. McGinnis, & T. D. Sadler (Co-PIs).
- The STEM Literacies Project* (2017-18). Missouri Department of Higher Education Improving Teacher Quality Grant. \$475,000. A. Lannin (PI); T.D. Sadler, S. Otten, K. Franklin, R. Gulstad, T. Gordon, K. Kline, & J. Sheerman (Co-PIs).
- Fostering Undergraduate Students' Disciplinary Learning and Water Literacy* (2016-2019). National Science Foundation through a subcontract from the University of Nebraska (C. T. Forbes, PI). \$30,000. T.D. Sadler (subcontract PI & evaluator).
- STEM Literacy Project: A Statewide Initiative* (2016-17). Missouri Department of Higher Education Improving Teacher Quality Grant. \$632,794. A. Lannin (PI); T.D. Sadler,

- V.A. Samaranyaki, O. Pringle, K. Franklin, R. Gulstad, T. Gordon, K. Kline, S. Martens, J. Dunham, & J. Sheerman (Co-PIs).
- Mission HydroSci: Game-based 3D Virtual Learning for Science Education* (2015-2018). RGK Foundation. \$30,000. J. Laffey (PI); T. D. Sadler & S. Goggins (Co-PIs).
- Mission HydroSci: A Virtual Learning Environment for Next Generation Science Learning* (2015-18). Institute of Education Sciences. \$1,500,000. T.D. Sadler (PI); J. Laffey, S. Goggins, M. Bloom, & W. Romine (Co-PIs).
- STEM-Based Literacy: A Statewide Initiative* (2015-16). Missouri Department of Higher Education Improving Teacher Quality Grant. \$570,760. A. Lannin (PI); T.D. Sadler, M. Kendrick, A. Newman, W. Saul, V.A. Samaranyaki, O. Pringle, K. Franklin, R. Gulstad, T. Gordon, K. Kline, S. Martens, J. Dunham, & J. Sheerman (Co-PIs).
- Distance Learning through Game-based 3D Virtual Learning Environments: Mission Hydro Science* (2015-2019). US Department of Education Investing in Innovation (i3). \$2,728,506 (plus \$380,000 in private matching funds). J. Laffey (PI); T.D. Sadler, S. Goggins, M. Bloom, & W. Romine (Co-PIs).
- The Missouri Transect: Climate, Plants, and Community* IIA-1355406 (2014-2019). National Science Foundation—EPSCoR Research Infrastructure Improvement Program. \$20,000,000. J.C. Walker (PI); T.D. Sadler (Co-Investigator, Science Education and Outreach Team).
- i-REU: The US/France Exchange Site in Chemistry* CHE-1156907 (2012-2015). National Science Foundation through a subcontract from University of Florida (V. Klieman, PI). \$15,000. T.D. Sadler (subcontract PI & evaluator).
- MU Noyce Scholars Program for Science and Mathematics Teachers* DUE-0832765 (2011-2012). National Science Foundation. \$498,020. T.D. Sadler (PI); S.K. Abell (original PI); P.J. Friedrichsen, A. G. Whittington, J.E. Adams & O. Chavez (Co-PIs).
- The Smallwood Scholarship Program: Providing Access to and Empirical Understandings of Authentic Science for Underrepresented High School Students* (2011-2012). Frances C. & William P. Smallwood Foundation. \$30,000. T.D. Sadler (PI); M.J. Koroly (Co-PI).
- The Smallwood Science Scholarship Program: Creating Opportunities for Success in Science* (2009-2011). Frances C. & William P. Smallwood Foundation. \$50,000. T.D. Sadler (PI); M.J. Koroly (Co-PI).
- OUTBREAK: Opportunities to Use Immersive Technologies to Explore Biotechnology Resources, Career Education And Knowledge* DRL-0833521 (2008-2012). National Science Foundation--Innovative Technology Experiences for Students and Teachers (ITEST). \$1,489,596. T.D. Sadler (PI); L. Annetta, M.J. Koroly, R.E. Ferdig & R.O. Snyder (Co-PIs).
- Towards an LSAMP Discovery and Innovation Center for International Undergraduate Research Experiences* HRD-0848089 (2008-2011). National Science Foundation. \$272,000. M. Scott (PI); A. Roitberg, T.D. Sadler, T. Emmel & J.P. Brown (Co-PIs).

The Smallwood Science Scholarship Program: Creating Opportunities for Underrepresented Students to Engage in Science (2008-2009). Frances C. & William P. Smallwood Foundation. \$19,000. T.D. Sadler (PI); M.J. Koroly (Co-PI).

The US/France REU Site in Chemistry CHE-0755225 (2008-2012). National Science Foundation. \$280,089. V. Kleiman (PI); A. Roitberg, J. Brown, T.D. Sadler & T. Hanks (Co-PIs).

The US/South America REU Site in Chemistry and Molecular Biodiversity CHE-0755022 (2008-2012). National Science Foundation. \$380,745. A. Roitberg (PI); J. Brown, T.D. Sadler, & J. Eyler (Co-PIs).

The Smallwood Science Scholarship Program: Broadening Opportunities for Success in the Sciences (2007-2008). Frances C. & William P. Smallwood Foundation. \$25,000. T.D. Sadler (PI); M.J. Koroly & B. Oliver (Co-PIs).

Science for life: Enhancing Undergrad and Pre-collegiate Student Experiences in the Life Sciences (2006-2010). Howard Hughes Medical Institute. \$1,500,000. R. Duran (PI); B. Dunn, L. Guillette, C. Emihovich, D. Julian, T.D. Sadler & M.J. Koroly (Co-PIs).

INTERNALLY FUNDED GRANT PROJECTS

iWater: Preliminary Work for a Science Education Virtual System (2013-2014). of Missouri Research Council. \$7,500. J. Laffey (PI); T.D. Sadler & S. Goggins (Co-PIs).

Engaging Future Scientists: Assessing Undergraduate Science Research Experiences (2007-2008). University of Florida Research Opportunity Fund. \$54,342. L. Ponjuan (PI); T.D. Sadler, R. Duran & J. Mastrodicasa (Co-PIs).

Curriculum and Assessment Tools for Advancing a Socioscientific Issue Research Program (2006-2007). University of Florida College of Education, College Research Incentive Fund. \$3,000. T.D. Sadler (PI).

Assessing Student Argumentation in Science (2005). Indiana University Office of the Vice President for Research, Summer Faculty Fellowship Program. \$8,000. T.D. Sadler (PI).

Discourse in Science Education: A Project for Enhancing Student Argumentation in Secondary Science Classrooms (2004-2005). Proffitt Endowment, Indiana University. \$40,000. T.D. Sadler (PI).

Accounting for Accountability: The Effects of Standards and High-stakes Testing on Secondary Science Education (2004-2005). School of Education, Indiana University. \$40,000. T.D. Sadler (PI).

PENDING GRANT PROPOSALS

Integrating science and computational thinking through algorithmic explanations of science processes (in review). National Science Foundation: STEM+C. \$1,500,000. T.D. Sadler (PI); P. Friedrichsen, A. Peel, W. Romine (Co-PIs).

CONFERENCE PAPER PRESENTATIONS (* Student collaborator; ^ Postdoc collaborator)

- Peel, A. N.*, Sadler, T. D., & Friedrichsen, P. (2019, April). *Computational thinking: A scaffold for natural selection context transfer*. NARST. Baltimore, MD.
- Sadler, T. D., Laffey, J. M., Goggins, S. P., Wulff, E. P.*, Womack, A. J.*, Griffin, J.*, Sigoloff, J.*, & Lander, S. (2019, April). *Mission HydroSci: Using gaming technologies to support NGSS-aligned learning*. NARST. Baltimore, MD.
- Wulff, E. P.*, Romine, W., Sadler, T. D., Womack, A. J.*, Laffey, J. M., Goggins, S. P., Griffin, J.*, & Sigoloff, J.* (2019, April). *Mission HydroSci: A NGSS aligned virtual environment*. NARST. Baltimore, MD.
- Womack, A. J.*, Sadler, T. D., & Oertli, T.* (2019, April). *Automated scoring of a constructed response vision II scientific literacy assessment*. NARST. Baltimore, MD.
- Sadler, T. D., Owens, D. C.^, & Friedrichsen, P. (2018, March). *Teaching practices for the enactment of socio-scientific issues oriented teaching: How an experienced teacher delivers SSI instruction*. NARST. Atlanta, GA.
- Peel, A. N.*, Zangori, L., Friedrichsen, P. J., Hayes, E.*, & Sadler, T. D. (2018, March). *Students' model-based explanations about natural selection and antibiotic resistance through socio-scientific issue based learning*. NARST. Atlanta, GA.
- Foulk, J.*, Zangori, L., & Sadler, T. D. (2018, March). *Exploring elementary teachers' understanding of modeling and socio-scientific issues with model-oriented issue-based teaching*. NARST. Atlanta, GA.
- Friedrichsen, P. J., Hancock, T.*, Kinslow, A. T.*, & Sadler, T. D. (2018, March). *A grounded theory study of secondary science teachers collaboratively co-designing socio-scientific issues-based curriculum units*. NARST. Atlanta, GA.
- Womack, A. J.*, Sadler, T. D., & Wulff, E. P.* (2018, March). *Automated scoring of scientific practices through open-ended, scenario-based assessments*. NARST. Atlanta, GA.
- Owens, D. C.^, Sadler, T. D., Barlow, A. T., & Smith-Walters, C. (2018, March). *Do they like it or not? Student motivation from and resistance to active learning*. NARST. Atlanta, GA.
- Zangori, L., Peel, A.*, Kinslow, A.*, Friedrichsen, P., & Sadler, T. (2017, April). *Student development and use of model-based explanations about carbon cycling and climate change*. AERA. San Antonio, TX.
- Sadler, T. D., Foulk, J.*, & Friedrichsen, P. (2017, April). *Evolution of a model for socio-scientific issue teaching and learning*. NARST. San Antonio, TX.
- Zangori, L., Peel, A.*, Kinslow, A.*, Friedrichsen, P., & Sadler, T. D. (2017, April). *Students' model-based explanations about carbon cycling and climate change through socio-scientific issues based learning*. NARST. San Antonio, TX.
- Menon, D. & Sadler, T. D. (2016, April). *Changes in preservice elementary teachers' science self-efficacy and its relation to science conceptual understandings in a science content course*. NARST. Baltimore, MD.

- Kinslow, A T.*, & Sadler, T. D. (2016, April). *Socio-scientific issues for scientific literacy: The evolution of an environmental education program with a focus on birds*. NARST. Baltimore, MD.
- Chandrasekhar, M., Menon, D.*, Sadler, T. D., & Kosztin, D. (2016, April). *Impact of mobile technology based physics curriculum on preservice elementary teachers' technology self-efficacy*. NARST. Baltimore, MD.
- Topcu, M. S., Pitiporntapin, S.^, Foulk, J.*, & Sadler, T. D. (2016, April). *The classroom protocol for socioscientific issue-based instruction: Development and implementation of a new instrument*. NARST. Baltimore, MD.
- Menon, D., Chandrasekhar, Kosztin, D., Sadler, T.D., Hill, S., & Steinhoff, D. (2015, July). *Examining the affordances of a mobile-based physics curriculum for teaching and learning*. American Association of Physics Teachers. College Park, MD.
- Sadler, T. D., Friedrichsen, P., Graham, K., Foulk, J.*, Tang, N.-E.*, & Menon, D.* (2015, April). *The derivation of an instructional model and design processes for socioscientific issues-based teaching*. NARST. Chicago, IL.
- Friedrichsen, P., Sadler, T. D., Graham, K., & Selby, L.* (2015, April). *A teacher-researcher collaboration for SSI-based teaching and learning*. NARST. Chicago, IL.
- Romine, W., & Sadler, T. D. (2015, April). *The effect of research on changes in interest in science and technology in college*. AERA. Chicago, IL.
- Cansiz, N.*, Yilmaz, O., & Sadler, T. D. (2014, April). *Fostering socioscientific reasoning through a socioscientific issues focused course*. AERA. Philadelphia, PA.
- Sadler, T. D., Romine, W. L., Menon, D.*, Annetta, L., & Klosterman, M. L. (2014, April). *Impacts of gaming, teachers, and student interest on science learning associated with innovative biotechnology curricula*. NARST. Pittsburgh, PA.
- Oliveira, A., Sadler, T. D., & Nash, C. (2014, April). *Socioscientific intertextuality in secondary science*. NARST. Pittsburgh, PA.
- Menon, D.*, & Sadler, T. D. (2014, April). *Identifying the sources of self-efficacy in a science content course for preservice elementary teachers*. NARST. Pittsburgh, PA.
- Cansiz, N.*, Yilmaz, O., & Sadler, T. D. (2014, April). *Breadth and depth of socioscientific reasoning: A new assessment strategy*. NARST. Pittsburgh, PA.
- Oliveira, A., Sadler, T. D., & Nash, C. (2014, April). *Socioscientific intertextuality in secondary science*. Association for Science Teacher Education (ASTE). San Antonio, TX.
- Sadler, T. D., Romine, W. L., Stuart, P. E.*, & Merle-Johnson, D. (2013, April). *Game-based curricula in biology classes: Multi-level assessment of science learning*. AERA. San Francisco, CA.
- Burgin, S. R.*, & Sadler, T. D. (2013, April). *Linking experiential aspects of a research apprenticeship program to gains in NOS understandings for high school student participants experiences different approaches to NOS teaching and learning*. NARST. Rio Grande, Puerto Rico.

- Stuart, P. E.*, Sadler, T. D., Romine, W. L., & Merle-Johnson, D. (2013, April). *Multi-level assessment of science learning in the context of a game-based curriculum*. NARST. Rio Grande, Puerto Rico.
- Presley, M. L.*, Sadler, T. D., & Romine, W. L. (2013, April). *Development, validation and use of new instrumentation for assessing student interest in science*. NARST. Rio Grande, Puerto Rico.
- Burgin, S. R.*, & Sadler, T. D. (2012, March). *Consistency of practical and formal epistemologies of science held by participants of a research apprenticeship*. NARST. Indianapolis, IN.
- Eastwood, J.^, & Sadler, T. D. (2012, March). *Teachers' implementation of a game-based biotechnology curriculum*. NARST. Indianapolis, IN.
- Sadler, T. D. (2012, January). *Supporting teacher enactment of socio-scientific issue based instruction through an online course experience*. ASTE. Clearwater, FL.
- Donnelly, L. A., & Sadler, T. D. (2012, January). *Teacher concerns about biotechnology education*. ASTE. Clearwater, FL.
- Puig, A., Sadler, T. D., & Trutschel, B. K.* (2011, April). *Laboratory instructional practices inventory (LIPI): A tool for assessing the transformation of undergraduate laboratory instruction*. AERA. New Orleans, LA.
- Barko, T. M.*, & Sadler, T. D. (2011, April). *Practicality in virtuality: Finding student meaning in video game education*. NARST. Orlando, FL.
- Klosterman, M. L., & Sadler, T. D. (2011, April). *Factors influencing secondary science teachers' use of popular media: The complexities of instructional practice*. NARST. Orlando, FL.
- Burgin, S. R.*, Sadler, T. D., & Griffin, R. D.* (2011, April). *Practical epistemologies of high school students participating in a research apprenticeship*. NARST. Orlando, FL.
- Sadler, T. D., & Zeidler, D. L. (2010, April). *Scientific literacy, PISA, and socioscientific discourse: Assessment for progressive aims of science education*. NARST. Philadelphia, PA.
- Burgin, S. R.*, Sadler, T. D., & Mann, J.* (2010, April). *Experiences and outcomes of a research apprenticeship for secondary students*. NARST. Philadelphia, PA.
- Sadler, T. D. (2009, August). *Authentic scientific research as contexts for teaching and learning*. European Science Education Research Association (ESERA). Istanbul, Turkey.
- Sadler, T. D. (2009, April). *Situated learning in science education: Socioscientific issues as contexts for practice*. NARST. Garden Grove, CA.
- Klosterman, M. L.*, & Sadler, T. D. (2009, April). *Multi-level assessment of scientific content knowledge gains associated with socioscientific issues-based instruction*. NARST. Garden Grove, CA.

- Topcu, M. S.*, Yilmaz-Tuzun, O., & Sadler, T. D. (2009, April). *Preservice science teachers' informal reasoning regarding socioscientific issues and the factors influencing their informal reasoning*. NARST. Garden Grove, CA.
- Sadler, T. D., & Burgin, S.* (2009, January). *Authentic science research experiences for students and teachers: A review of empirical literature*. ASTE. Hartford, CT.
- Donnelly, L. A., & Sadler, T. D. (2008, January). *Indiana high school science teachers' views of standards and accountability: "Is it better to feed the hogs or to weigh 'em?"* ASTE. St. Louis, MO.
- Ponjuan, L., McKinney, L.*, Waltrip, L.*, & Sadler, T. D. (2007, November). *Engaging future scientists: Assessing undergraduate research experiences of students of color*. Association for the Study of Higher Education. Louisville, KY.
- Sadler, T. D. (2007, August). *The role of content knowledge for socioscientific argumentation*. ESERA. Malmö, Sweden.
- Zeidler, D.L., Sadler, T.D., Callahan, B.*, Burek, K.* & Applebaum, S.* (2007). *Advancing reflective judgment through socioscientific issues*. ESERA. Malmö, Sweden.
- Sadler, T. D., Burgin, S.*, McKinney, L.* (2007, April). *Learning science through research apprenticeships: A critical review of the literature*. NARST. New Orleans, LA.
- Zeidler, D. L., Sadler, T. D., Callahan, B. E.*, Burek, K.*, & Applebaum, S.* (2007, April). *Improving reflective judgment in high school students through socioscientific issues*. NARST. New Orleans, LA.
- Oliveira, A. W.*, Sadler, T. D., Suslak, D. (2007, April). *The linguistic construction of expert identity in professor-student discussions of science*. NARST. New Orleans, LA.
- Sadler, T. D., & Klosterman, M.* (2007, January). *Transitioning from student teacher to teaching professional: Evolving perspectives of beginning science teachers*. ASTE. Clearwater, FL.
- Zeidler, D. L., Sadler, T. D., & Applebaum, S.* (2007, January). *Character, critique and controversy in science teacher education*. ASTE. Clearwater, FL.
- Sadler, T. D., Barab, S. A., & Scott, B.* (2006, April). *What do students gain by engaging in socioscientific inquiry?* NARST. San Francisco, CA.
- Oliveira, A. W.*, & Sadler, T. D. (2006, April). *Interactive patterns and convergence of meaning during student collaborations in science*. NARST. San Francisco, CA.
- Sadler, T. D., & Fowler, S.* (2006, April). *Assessing socioscientific argumentation: Variation among high school and college learners*. AERA. San Francisco, CA.
- Barab, S. A., Sadler, T. D., & Heiselt, C.* (2006, April). *Relating narrative, inquiry, and inscriptions: A framework for socio-scientific inquiry*. AERA. San Francisco, CA.
- Zeidler, D. L., Applebaum, S.*, & Sadler, T. D. (2006, January). *Using socioscientific issues as context for teaching content and concepts*. ASTE. Portland, OR.
- Sadler, T. D., & Donnelly, L. A.* (2005, April). *Socioscientific argumentation: The effects of content knowledge and morality*. NARST. Dallas, TX.

- Kazempour, M.*, Amirshokoohi, A.*, Sadler, T. D., & Allspaw, K.* (2005, April). *The role of values in the science classroom: Teachers weigh in*. NARST. Dallas, TX.
- Zeidler, D. L., Sadler, T. D., & Applebaum, S.*, Callahan, B.*, & Amiri, L.* (2005, April). *Socioscientific issues in secondary school science: Students' epistemological conceptions of content, NOS, and ethical sensitivity*. NARST. Dallas, TX.
- Sadler, T. D. (2005, January). "I won't last three weeks:" *Preservice teachers reflect on their student teaching experiences*. ASTE. Colorado Springs, CO.
- Zeidler, D. L., Sadler, T. D., & Applebaum, S.* (2005, January). *A study of socioscientific issues in secondary school science: Students' understanding of content, NOS and ethical sensitivity*. ASTE. Colorado Springs, CO.
- Sadler, T. D. (2004, October). *Promoting discourse and argumentation in science teacher education*. Southeastern Association for the Education of Teachers of Science (SAETS). Gainesville, FL.
- Zeidler, D. L., & Sadler, T. D. (2004, October). *Students' conceptualizations of data and scientific merit in the context of socioscientific issues*. SAETS. Gainesville, FL.
- Sadler, T. D., & Zeidler, D. L. (2004, April). *The significance of content knowledge for socioscientific decision-making: Applying genetics knowledge to genetic engineering issues*. NARST. Vancouver, BC.
- Zeidler, D. L., Sadler, T. D., Simmons, M. L.*, & Howes, E. V. (2004, April). *Beyond STS: A research-based framework for socioscientific issue education*. NARST. Vancouver, BC.
- Sadler, T. D. (2004, February). *Socioscientific decision-making as an integral component of scientific literacy*. Hoosier Association of Science Teachers, Inc. Indianapolis, IN.
- Sadler, T. D., & Zeidler, D. L. (2004, January). *Patterns of informal reasoning in the context of socioscientific decision-making*. Association for the Education of Teachers in Science. Nashville, TN. (ERIC Document Reproduction Service ED481211)
- Zeidler, D. L., Sadler, T. D., & Simmons, M. L.* (2003, August). *Morality and socioscientific issues in science education: Current research and practice*. ESERA. Noordwijkerhout, The Netherlands.
- Sadler, T. D., & Zeidler, D. L. (2003, April). *Weighing in on genetic engineering and morality: Students reveal their ideas, expectations, and reservations*. NARST. Philadelphia, PA. (ERIC Document Reproduction Service ED475162)
- Sadler, T. D. (2002, October). *Socioscientific issues and the affective domain: Scientific literacy's missing link*. SAETS. Kennesaw, GA. (ERIC Document Reproduction Service ED 472 041)
- Sadler, T. D., Chambers, F. W.*, & Zeidler, D. L. (2002, April). *Investigating the crossroads of socioscientific issues, the nature of science, and critical thinking*. NARST. New Orleans, LA. (ERIC Document Reproduction Service ED466401)
- Sadler, T. D., Chambers, F. W.*, & Zeidler, D. L. (2001, November). *The influence of ideas about the nature of science on socioscientific decision-making*. Florida Higher Education Consortium for Mathematics and Science Education. St. Petersburg, FL.

- Sadler, T. D., Chambers, F. W.*, & Zeidler, D. L. (2001, October). *An examination of student ideas regarding socioscientific issues and the nature of science*. SAETS. Tampa, FL.
- Kersaint, G., Borman, K., Boydston, T., & Sadler, T. (2001, April). *Teachers' perceptions of their USI professional development experiences*. Annual Conference for Systemic Initiative Data Managers, Local Evaluators, Project Directors, and Urban Study Groups. Tampa, FL. (ERIC Document Reproduction Service ED478497)
- Zeidler, D.L., & Sadler, T. D. (2000, October). *Bad science and its social consequences: Historical perspectives*. SAETS. Auburn, AL. (ERIC Document Reproduction Service ED449027)

CONFERENCE POSTERS (* Student collaborator; ^ Postdoc collaborator)

- Peel, A. N.*, Nguyen, H. T.*, Sadler, T. D., Friedrichsen, P. J., Zangori, L., & Kinslow, A. T.* (2019, April). *A professional development design cycle to support embedding modeling practices into socio-scientific issue teaching*. NARST. Baltimore, MD.
- Owens, D. C.^, Sadler, T. D., Murakami, C. D., & Tsai, C.-L. (2018, April). *Teacher views on and preferences for meeting their professional development needs in STEM*. AERA. New York, NY.
- Womack, A. J.*, Sadler, T. D., & Wulff, E. P.* (2018, April). *Automated scoring of scientific practices using the next generation Science learning assessment system*. AERA. New York, NY.
- Zangori, L., Sadler, T. D., & Peel, A. N.* (2018, March). *Exploring how 3rd-grade students engage in socio-scientific argumentation*. NARST. Atlanta, GA.
- Nguyen, H. T.*, Kinslow, A. T.*, & Sadler, T. D. (2018, March). *An exploration of students' socio-scientific reasoning through socio-scientific issue-based instruction*. NARST. Atlanta, GA.
- Peel, A. N.*, & Sadler, T. D. (2018, March). *INSECT: A framework for INtegrating Science Education and Computational Thinking*. NARST. Atlanta, GA.
- Nguyen, H.*, Stone, B., & Sadler, T. D. (2017, November). *An exploration of socio-scientific reasoning through teaching about genetically modified organisms*. National Association of Biology Teachers. St. Louis, MO.
- Kinslow, A., Sadler, T., Friedrichsen, P., Zangori, L., Peel, A., Murakami, C., Foulk, J., & Nguyen, H. (2017, August). *Development and implementation of Missouri EPSCoR education modules*. Missouri EPSCoR Annual Meeting. St. Louis, MO.
- Peel, A., Sadler, T. D., Foulk, J., Friedrichsen, P., Hancock, T., & Cite, S. (2017, August). *Rigorous investigation of relevant issues: A professional development supporting teacher design of socio-scientific issue units*. Missouri EPSCoR Annual Meeting. St. Louis, MO.
- Foulk, J. A., Zangori, L., Sadler, T. D., & Kinslow, A. (2017, August). *Elementary teachers' views about model-based socio-scientific issues teaching and learning*. Missouri EPSCoR Annual Meeting. St. Louis, MO.

- Kinslow, A. T.*, Sadler, T. D., & Owens, D. C.^ (2017, April). *Rigorous investigation of relevant issues: A socio-scientific approach to food, energy & water education*. Water for Food Conference. Lincoln, NE.
- Womack, A. J.*, Wulff, E.*, Sadler, T. D., & Romine, W. (2017, April). *Assessment of next generation science learning*. San Antonio, TX.
- Wulff, E.*, Sadler, T. D., & Romine, W. (2017, April). *Measure of Affect in Science and Technology (MAST): Development and validation of a new instrument*. NARST. San Antonio, TX.
- Nguyen, H.*, Kinslow, A.*, & Sadler, T. D. (2017, April). *Improvement of students' science knowledge and socio-scientific reasoning through socio-scientific issue teaching*. NARST. San Antonio, TX.
- Kinslow, A.*, Nguyen, H.*, & Sadler, T. D. (2017, April). *Socio-scientific reasoning in a high school field ecology SSI course*. NARST. San Antonio, TX.
- Romine, W., Kinslow, A.*, & Sadler, T. D. (2017, April). *Assessing vision II literacy with socio-scientific issues: A quantitative assessment of socio-scientific reasoning*. NARST. San Antonio, TX.
- Foulk, J. A.*, Sadler, T. D., Kinslow, A. T.*, Peel, A.*, Nguyen, H.*, & Friedrichsen, P. J. (2016, September). *Rigorous investigation of relevant issues: Teachers' learning about socio-scientific issues teaching and learning*. Missouri EPSCOR Conference. Rolla, MO.
- Kinslow, A. T.*, Sadler, T. D., & Nguyen, H.* (2016, September). *Rigorous investigation of relevant issues: Socio-scientific reasoning in a high school field ecology SSI course*. Missouri EPSCOR Conference. Rolla, MO.
- Peel, A.*, Kinslow, A. T.*, Sadler, T. D., Friedrichsen, P. J., Zangori, L., & Graham, K. (2016, September). *Rigorous investigation of relevant issues: A socio-scientific issues approach to support three-dimensional science learning*. Missouri EPSCOR Conference. Rolla, MO.
- Sadler, T. D., Kinslow, A. T.*, Murakami, C., Tsai, C.-L., McFarling, P., & Owens, D. C. (2016, September). *MO-STEM professional development needs assessment: Survey results for K-12 STEM Teachers*. Missouri EPSCOR Conference. Rolla, MO.
- Sadler, T. D., Laffey, J., & Goggins, S. (2016, April). *Mission HydroSci: Next generation science learning through virtual environments*. NARST. Baltimore, MD.
- Kinslow, A. T.*, Sadler, T. D., Friedrichsen, P. J., Graham, K., & Peel, A.* (2016, April). *Rigorous investigation of relevant issues: A socio-scientific issues approach to support three-dimensional science learning*. NARST. Baltimore, MD.
- Sadler, T. D., & Nguyen, H.* (2015, June). *Missouri Transect education team: Development and testing of K-12 Learning modules*. Missouri EPSCoR Conference, Columbia, MO.
- Sadler, T. D. (2014, October). *The ReSTEM Institute: Reimagining & Researching STEM Education*. Broader Impacts Resource Fair. University of Missouri. Columbia, MO.

- Sadler, T. D. (2014, September). *The ReSTEM Institute: Reimagining & Researching STEM Education*. Integrating Cognitive Science with Innovative Teaching in STEM Disciplines Conference, Washington University, St. Louis, MO.
- Burgin, S. R.*, Barko, T. M.*, & Sadler, T. D. (2013, April). *Comparison of NOS teaching and learning approaches in the context of a research apprenticeship program for high school students*. NARST. Rio Grande, Puerto Rico.
- Sadler, T. D., & Klosterman, M. L.* (2011, April). *Learning science content and socio-scientific reasoning through classroom explorations of global climate change*. NARST. Orlando, FL.
- Sadler, T. D. (2009, April). *Socioscientific issues as contexts for promoting argumentation and nature of science understandings*. NARST. Garden Grove, CA.
- Topcu, M. S.*, & Sadler, T. D. (2009, April). *Preservice science teachers' informal reasoning quality: An analysis across multiple socioscientific issues*. NARST. Garden Grove, CA.
- Sadler, T. D., Ponjuan, L., & McKinney, L. L.* (2009, April). *Authentic science research experiences for undergraduates: Participation patterns of students underrepresented in the sciences*. NARST. Garden Grove, CA.
- Sadler, T. D. (2008, January). *Science for Life: A multidisciplinary program to strengthen and transform undergraduate science education*. ASTE. St. Louis, MO.
- Sadler, T. D., & Burgin, S.* (2007, October). *Broadening opportunities for success in science: The Smallwood Science Scholarship program*. Southeastern Association for Science Teacher Education (SASTE). Valdosta, GA.
- Zeidler, D. L., Sadler, T. D., & Koehler, C.* (2006, April). *Student conceptions of mixed evidence using socioscientific issues: Seventh and twelfth grade perspectives*. NARST. San Francisco, CA.
- Lewis, J. E., Sadler, T. D., Eckart, T.*, & Whitley, K. M. (2004, August). *Science literacy and information literacy in a middle school*. American Chemical Society. Philadelphia, PA.
- Whitley, K. M., Sadler, T. D., Eckart, T.*, & Lewis, J. E. (2004, June). *Information literacy teamed with science literacy*. Special Libraries Association. Nashville, TN.

CONFERENCE SYMPOSIA & WORKSHOPS (* Student collaborator)

- Friedrichsen, P., Zangori, L., Sadler, T. D., & Peel, A.* (2019, April). *Using modeling to make sense of climate change and carbon cycling*. National Science Teachers Association. St. Louis, MO.
- Sadler, T. D., Zangori, L., & Friedrichsen, P. (2019, April). *Socio-scientific Issues Symposium: Engaging teachers in the co-design of socio-scientific issues curricula*. NARST. Baltimore, MD.
- Nguyen, H., Sadler, T. D., & Stone, B. (2018, November). *Promote students' socio-scientific reasoning through controversial issues*. Workshop. National Science Teachers Association, Charlotte, NC.

- Peel, A.* & Sadler, T. D. (2017, November). *Socio-scientific issues teaching and learning*. Workshop. National Association of Biology Teachers, St. Louis, MO.
- Peel, A.* & Sadler, T. D. (2017, October). *Teaching science through socio-scientific issues and modeling*. Workshop. Science Teachers of Missouri, Columbia, MO.
- Hirsch, A., Roychoudhury, A., Clough, M., Hufnagel, E. J., Zeidler, D., Peel, A., Anderson, C., Shepardson, D., Johnson, W., Busch, K.C., McGinnis, J. R., Sadler, T. D., & Branch, G. (2017, April). *A symposium on teaching and learning about climate change: A framework for educators*. Symposium, NARST, San Antonio, TX.
- Friedrichsen, P., Sadler, T. D., & Peel, A.* (2016, October). *Teaching science through rigorous investigation of relevant issues*. Workshop. Science Teachers of Missouri, Columbia, MO.
- Sadler, T. D., de Araujo, Z., Foulk, J.*, Kinslow, A.*, Lankford, D., Otten, S., Strobel, J., & Weibel, C. (2015, September). *STEM Education*. Symposium, Mizzou EdCamp. Columbia, MO.
- Sadler, T. D., Friedrichsen, P., & Graham, K. (2015, December). *An instructional model for NGSS aligned, socio-scientific issues based teaching*. Workshop, National Science Teachers Association (NSTA). Kansas City, KS.
- Sadler, T. D., Kinslow, A. T.*, Foulk, J. A.* (2015, December). *Teaching and learning modules that build from cutting edge research on climate, plants and communities*. Workshop, NSTA. Kansas City, KS.
- Sadler, T. D., Womack, A. J. *, Laffey, J., Goggins, S., Griffin, J. G.* & Kim, S.M. (2015, December). *Mission HydroSci: A Virtual Environment for Teaching Water Systems and Argumentation*. Workshop, NSTA. Kansas City, KS.
- Sadler, T. D. (2014, November). *Research experiences for undergraduates: Engaging in scientific practices*. Workshop, NSTA. Orlando, FL.
- Spencer, K., Matthews, C., Yeziarski, E., Herrington, D. G., Rutledge, A., Sadler, K., Feldman, A., & Sadler, T.D. (2014, November). *Exemplary Science Series: STEM learning*. Symposium, NSTA. Orlando, FL.
- Sadler, T. D., Lang, H., Hogg, T., & Dougherty, B. J. (2013, May). *Collaborative development of a framework for elementary STEM education*. Workshop, NSTA STEM Forum & Expo. St. Louis, MO.
- Annetta, L. A., Clark, D. B., Ketelhut, D. J., Sadler, T. D. (2012, March). *Serious educational Games: Research experiences from National Science Foundation Funded Projects*. Symposium, NARST. Indianapolis, IN.
- Kolodner, J., Sadler, T., Songer, N., & Quintana, C. (2011, April). *The cyberlearning research agenda: A view from NSF*. Symposium, NARST. Orlando, FL.
- Sadler, T. D., Klosterman, M., Zeidler, D. L., Applebaum, S., Evagorou, M., Simon, S., Amos, R., Eastwood, J., Tal, T., & Kali, Y. (2011, April). *Socio-scientific issues in science classrooms: Teaching, learning and research*. Symposium, NARST. Orlando, FL.
- Barko, T. M.*, & Sadler, T. D. (2011, March). *It's not all zombies and violence: Using gaming to promote biotechnology learning*. Workshop, NSTA. San Francisco, CA.

- Almqvist, J., Brickhouse, N. W., Lederman, J., Lederman, N. G., Ligozat, F., Östman, L., Sadler, T. D., Wickman, P.-O., & Zeidler, D. L. (2009, August). *Exploring themes of scientific literacy*. Symposium, ESERA. Istanbul, Turkey.
- Fensham, P. J., McCrae, B., Schoeps, K., Roennebeck, S., Sadler, T.D., Zeidler, D. L., Millar, R. (2009, August). *Assessment of context-based science education: Lessons from PISA 2006*. Symposium, ESERA. Istanbul, Turkey.
- Zeidler, D. L., Sadler, T. D., Nieswandt, M., Tsai, C. C., Dawson, V., Venville, G., Barrett, S., & Topcu, M. (2008, April). *Impact of socioscientific issues research on research, policy and practice*. Symposium, NARST. Baltimore, MD.
- Fowler, S.*, Sadler, T. D., Applebaum, S.*, Callahan, B.*, & Zeidler, D. L. (2008, January). *Teaching with socioscientific issues: Controversial issues as context for learning content*. Workshop, ASTE. St. Louis, MO.
- Lewis, A.*, Amiri, L.*, & Sadler, T. D. (2006, April). *Nature of science in the context of socioscientific issues*. Symposium, NARST. San Francisco, CA.
- Sadler, T. D., & Zeidler, D. L. (2005, October). *The socioscientific issue agenda: Goals and models for teaching and research*. Symposium, SASTE. Athens, GA.
- Sadler, T. D., & Allspaw, K.* (2005, February). *Promoting argumentation in science classrooms*. Workshop, Hoosier Association for Science Teachers, Indianapolis, IN.
- Phillipson, T.*, Akerson, V., Sadler, T. D., Hanuscin, D.*, Donnelly, L.*, & Deniz, H.* (2004, February). *Introducing the nature of science into the science methods classroom*. Workshop, Hoosier Association of Science Teachers, Indianapolis, IN.
- Zeidler, D. L., Simmons, M., Bell, R., Loving, C., McGinnis, J. R., Sadler, T. D., Abd-El-Khalick, F., & Osborne, J. (2002, April). *Moral and ethical issues in science education: Is there a voice for research, policy and practice?* Symposium, NARST. New Orleans, LA.
- Zeidler, D. L., & Sadler, T. D. (2002, January). *Using moral and ethical issues in science teacher education*. Workshop, ASTE. Charlotte, NC.
- Simmons, M. L., Zeidler, D. L., & Sadler, T. D. (2001, October). *The role of moral reasoning in science education: Issues and trends*. Symposium, Southeastern Association for the Education of Teachers in Science. Tampa, FL.
- Zeidler, D.L., Simmons, M., Walker, K., Lederman, N., Bell, R., Berkowitz, M., Simmons, P., Keefer, M., Duschl, R., Witz, K., Loving, C., McGinnis, J. R., Pedretti, E., Ackett, W., & Sadler, T. (2001, April). *The role of moral reasoning on socio-scientific issues and discourse in science education*. Symposium, NARST. St. Louis, MO.

INVITED SEMINARS & PRESENTATIONS

- Baron, J., Serpell, Z., Meier, E., Sadler, T. D., & Ayscue, J. (2018, April). *Connecting to congress: Stories and strategies*. Invited session. AERA. New York, NY.
- Sadler, T. D. (2017, October). *Promoting scientific literacy through model-oriented issue-based teaching and learning*. University of Maryland Center for Science and Technology. College Park, MD.

- Sadler, T. D. (2017, October). *Promoting scientific literacy through teaching and learning with socio-scientific issues*. Invited presentation. Wright State University. Dayton, OH.
- Subbiah, J., Roehrig, G., Sadler, T. D., & Arthurs, L. (2017, April). *Food, energy & water education*. Invited Panel Discussion. Water for Food Conference. Lincoln, NE
- Sadler, T. D. (2016, March). *Socio-scientific issues as a central element of scientific literacy: Toward a framework for K-16 teaching and learning*. Invited presentation. University of Nebraska. Lincoln, NE.
- Sadler, T. D. (2016, January). *Intellectual merit for NSF proposals*. Grant-writing workshop. College of Education, University of Missouri. Columbia, MO.
- Sadler, T. D. (2015, October). *Science education research*. Faculty to faculty presentation. Division of Biological Sciences, University of Missouri. Columbia, MO.
- Sadler, T. D. (2015, September). *Building partnerships with K-12 teachers and students*. Keynote address. American Society for Engineering Education (Zone III). Springfield, MO.
- Curs, B., Dorner, L., Sadler, T. D., Van Horn, S., & Webel, C. (2015, September). *The article-based dissertation*. Panel discussion. QuaRC QualCon, University of Missouri. Columbia, MO.
- Sadler, T. D. (2015, May). *Learning about the epistemology of science*. Invited presentation. Convocation on Integrating Discovery-Based Research into the Undergraduate Curriculum. National Academy of Sciences. Washington, DC. (Featured in the convocation report published by the National Academies Press DOI: 10.17226/21851)
- Sadler, T. D. (2014, February). *Engaging learners in science through socio-scientific issues: Water in socio-ecological systems*. Invited presentation. Water & Society Network, University of Missouri. Columbia, MO.
- Szydłowski, M., O'Day, B., Sadler, T. D., Adams, C. (2013, October). *College and career readiness and the Next Generation Science Standards*. Panel discussion. Science Teachers of Missouri. Columbia, MO.
- Sadler, T. D. (2013, June). *Using socio-scientific issues to support science learning and promote scientific literacy*. Keynote address. Sociocultural Approaches to Socioscientific Issues and Nature of Science Workshop. Global Institute for STS Education, Ewha University, Seoul, South Korea.
- Sadler, T. D. (2013, April). *The influence of JRST scholarship: The socio-scientific issues research agenda*. Invited presentation. NARST. Rio Grande, Puerto Rico.
- Sadler, T. D. (2013, April). *Socio-scientific issues as contexts for STEM education*. Invited presentation and panel discussion. STEM Education Researchers' Forum. Southern Illinois University Edwardsville, Edwardsville, IL.
- Sadler, T. D. (2013, February). *Next Generation Science Standards*. Invited presentation. MO STEM Network. University of Missouri, Columbia, MO.

- Sadler, T. D. (2012, July). *Strategies and challenges for assessing and evaluating authentic research experiences*. Keynote address. Chemistry Research Experiences for Undergraduates Principal Investigators Meeting, National Science Foundation, San Antonio, TX.
- Sadler, T. D. (2012, May). *Assessment of learning outcomes associated with socio-scientific issues based instruction*. Invited seminar. Ecole Normale Superieure de Cachan, Paris, France.
- Ladwig, A., Sadler, T. D., Waldron, A., Adams, C., & Evans, C. (2012, March). *The role implementation and funding of science, technology, engineering, and math education in the United States*. Panel discussion. Connecting Politics and Science Symposium, University of Missouri, Columbia, MO.
- Sadler, T. D., Baker, E., & Kuby, C. (2012, March). *Theoretical, conceptual, and methodological frameworks for qualitative research*. Panel discussion. Qualitative Research Consortium, College of Education, University of Missouri, Columbia, MO.
- Sadler, T. D. (2012, February). *STEM knowledge and skills: Lessons learned from OUTBREAK*. Invited panel discussion. ITEST Principal Investigator's meeting, National Science Foundation, Washington, DC.
- Sadler, T. D., & Blockus, L. (2012, February). *Connecting science and education research: Community Brainstorming for Collaborative Projects*. Invited seminar. Sandra K. Abell Conversations about College Science Teaching, University of Missouri, Columbia, MO.
- Sadler, T. D. (2011, December). *Authentic research experiences as contexts for learning science*. Invited presentation. Mathematics and Science Education Research Colloquium, University of Missouri, Columbia, MO.
- Sadler, T. D. (2011, June). *Socio-scientific reasoning as a critical aspect of public understanding of science*. Invited presentation. Deutsche Forschungsgemeinschaft-National Science Foundation Conference: Public Understanding and Public Engagement with Science, New York, NY.
- Sadler, T. D. (2011, April). *How contexts transform opportunities to learn science*. Invited seminar. University of Missouri, Columbia, MO.
- Sadler, T. D., & Klosterman, M. L. (2011, March). *OUTBREAK: Opportunities to Use Immersive Technologies to Promote Biotechnology Resources, Career Resources And Knowledge*. Invited poster. ITEST Principal Investigator's meeting, National Science Foundation, Washington, DC.
- Sadler, T. D. (2010, March). *The role of socio-scientific issues in science education: Mapping a research agenda*. Invited seminar. University of Missouri, Columbia, MO.
- Sadler, T. D. (2010, November). *Using games to motivate student learning and interest in science*. Invited poster. Faculty Research and Engaged Scholarship Showcase, University of Florida, Gainesville, FL.

- Sadler, T.D. (2010, September). *Socio-scientific issues as contexts for learning and practice in science education*. Plenary lecture. Society for Didactics in Chemistry and Physics, Potsdam, Germany.
- Sadler, T. D. (2010, March). *Socio-scientific issues as contexts for science education: Classroom enactment and student learning*. Invited seminar. University of Nebraska, Lincoln, NE.
- Sadler, T. D. (2010, February). *OUTBREAK: Opportunities to Use immersive Technologies to promote Biotechnology Resources, career Resources And Knowledge*. Invited poster. ITEST Principal Investigator's meeting, National Science Foundation, Washington, DC.
- Sadler, T. D. (2009, November). *Harnessing the power of games to teach biotechnology*. Invited poster. Faculty Research and Engaged Scholarship Showcase, University of Florida, Gainesville, FL.
- Sadler, T. D. (2009, August). *Socio-scientific issues as contexts for argumentation: Implications for science education research*. Invited seminar. Turkish Doctoral Symposium in Science Education. Ahi Evran University. Kirsehir, Turkey.
- Sadler, T. D. (2009, May). *Socioscientific issues as contexts for science education: An overview of the research and a sample study*. Invited seminar. North Carolina State University. Raleigh, NC.
- Sadler, T. D. (2009, February). *OUTBREAK: Opportunities to Use immersive Technologies to promote Biotechnology Resources, career Resources And Knowledge*. Invited poster. ITEST Principal Investigator's meeting, National Science Foundation, Washington, DC.
- Sadler, T. D. (2008, May). *Scientific literacy and meaningful learning: The place of socioscientific issues in science education*. Invited seminar. University of Barcelona, Barcelona, Spain.
- Sadler, T. D. (2008, March). *Socioscientific reasoning as legitimate practice for science learners*. Keynote address. Indiana University Science Education Research Symposium, Bloomington, IN.
- Sadler, T. D. (2008, February). *Socioscientific issues as contexts for meaningful learning*. Invited seminar. Brigham Young University Department of Biology, Provo, UT.
- Sadler, T. D. (2007, May). *The aims of science education: Unifying the fundamental and derived senses of scientific literacy*. Invited presentation. Linnaeus Tercentenary Symposium: Promoting Scientific Literacy: Science Education Research in Transaction, Uppsala, Sweden.
- Sadler, T. D. (2005, December). *The doctorate must be more than just classes and checklists*. Keynote address. Department of Secondary Education Ph.D. Faculty/ Student Reception 2005, University of South Florida, Gainesville, FL.

- Sadler, T. D. (2005, February). *Argumentation and socioscientific issue research: An overview, example and agenda*. Invited seminar. University of Florida College of Education, Gainesville, FL.
- Sadler, T. D. (2004, November). *Finding a place for ethics and argumentation in science classrooms*. Invited seminar. School of Education Faculty Research Colloquium, Indiana University, Bloomington, IN.
- Sadler, T. D. (2002, December). *Informal reasoning regarding socioscientific issues: The influence of morality and content knowledge*. Invited seminar. Indiana University School of Education, Bloomington, IN.

PROFESSIONAL DEVELOPMENT, OUTREACH PRESENTATIONS & GUEST LECTURES

- Friedrichsen, P., Sadler, T. D., & Zangori, L., Peel. (2019, May). *Teaching practices for socio-scientific issues and model based learning*. Teacher workshop. Columbia, MO.
- Sadler, T. D. (2018, August). *Issues as contexts for interdisciplinary teaching and learning*. Invited presentation. Moss Street Partnership School. Reidsville, NC.
- Friedrichsen, P., Sadler, T. D., Zangori, L., Peel, A., Kinslow, A. T., & Graham, K. (2018, June). *Model-oriented issue based curriculum development and teaching*. Teacher workshop. Columbia, MO.
- Owens, D. C. ^, & Sadler, T. D. (2018, February). *Scenario-based assessments for STEM learning*. Teacher workshop. STEM Literacies Project. Columbia, MO.
- Sadler, T. D., Griffin, J.*, Wulff, E.*, Lander, S., & Laffey, J. (2018, January). *Mission HydroSci: Science learning through game play*. Public demonstration. ED Games Expo. Kennedy Center, Washington, DC.
- Sadler, T. D. (2017, February). *Assessing what matters in science and mathematics*. Teacher workshop. STEM Literacies Project. Columbia, MO.
- Sadler, T. D. (2017, January). *What do Missouri STEM Teachers Need and Want through Professional Development?* Webinar. Missouri ESPCoR Program.
- Sadler, T. D. (2016, November). *Showcasing your teaching in the job search process*. Webinar. Entomological Society of America.
- Sadler, T. D., & Foulk, J.* (2015, August). *Using issues in the design of science instruction for promoting science practices*. Teacher workshop. Rockwood School District. Eureka, MO.
- Sadler, T. D., & Lankford, D. (2015-2016). *Climate change as a context for issue based teaching*. Teacher workshops (four sessions). STEM Literacies Project. Columbia, MO.
- Sadler, T. D. (2015, March). *The National Science Foundation as a funding agency for educational research*. Guest lecture. University of Missouri. Columbia, MO.
- Sadler, T. D. (2014, October). *Partnering with K-12 schools, science teachers and students*. Invited lecture. Broader Impacts Resource Fair, University of Missouri. Columbia, MO.

- Sadler, T. D. (2014, August). *Scientific Argumentation for Elementary Science Teaching*. Invited presentation. Science Teachers of Missouri and the Quality Elementary Science Teaching program's Elementary Science Conference. Columbia, MO.
- Sadler, T. D. (2014, January). *The ReSTEM Institute: Rethinking, Reforming and Researching STEM Education*. Invited presentation. Missouri Partnership for Educational Renewal Columbia, MO.
- Sadler, T. D. (2013, November). *Applying for a faculty position: How to write a teaching statement*. Invited presentation. University of Missouri Postdoctoral Association. Columbia, MO.
- Sadler, T. D. (2013, September). *Partnering with K-12 science teachers and students*. Invited lecture, Outreach & Science Communication Career Symposium. American Society for Biochemistry and Molecular Biology. Columbia, MO.
- Sadler, T. D. (2013, September). *Strategies and tips for being successful in academic writing*. Campus Writing Program seminar. University of Missouri. Columbia, MO.
- Szydowski, M., Sadler, T. D., & Galen, C. (2013, July). *Working toward the Next Generation Science Standards*. ShowMe Nature GK-12 teacher workshop. Columbia, MO.
- Sadler, T. D. (2012, July). *Viral Quest teacher workshop*. Professional development institutes for high school teachers. University of Florida. Gainesville, FL.
- Sadler, T. D. (2011, July). *How do people learn science? Research in socio-scientific issue based teaching*. Invited lecture. Student Science Training Program, University of Florida. Gainesville, FL.
- Sadler, T. D., & Brown, J. C.* (2011, June-July). *Viral Quest teacher workshop*. Professional development institutes for high school teachers. University of Florida. Gainesville, FL.
- Sadler, T. D. (2011, January). *Teaching agricultural sciences with socio-scientific issues*. Workshop for pre-service teachers. University of Florida. Gainesville, FL.
- Sadler, T. D., & Barko, T.* (2010, December). *Mission Biotech: Teacher training*. Professional development workshops for high school teachers. Tarpon Springs High School. Tarpon Springs, FL.
- Sadler, T. D. & The OUTBREAK Team. (2010, June-July). *Mission Biotech teacher workshop*. Professional development institutes for high school teachers. University of Florida. Gainesville, FL.
- Sadler, T. D. (2010, July). *The science of teaching and learning: Using gaming technologies and research experiences as opportunities to learn science*. Invited lecture, Student Science Training Program, University of Florida. Gainesville, FL.
- Sadler, T. D. (2009, September). *Current research trends in the teaching and learning of science*. Guest lecture. University of Florida. Gainesville, FL.
- Sadler, T. D. (2009, June). *The National Science Foundation as a funding agency for educational research*. Guest lecture. University of Florida. Gainesville, FL.

- Sadler, T. D. (2008, June). *Biotechnology education and socioscientific issues*. Teacher workshop. Center for Precollegiate Education & Training, University of Florida. Gainesville, FL.
- Sadler, T. D. (2008, June). *Funding opportunities to support educational research and outreach*. Guest lecture. University of Florida. Gainesville, FL.
- Sadler, T. D. (2008, June). *Situated perspectives on teaching and learning science*. Guest lecture. University of Florida, Gainesville, FL.
- Sadler, T. D., & Julian, D. (2007, October). *Science for Life: Curriculum development and education*. Invited lecture, Institute for Learning in Retirement, Gainesville, FL.
- Sadler, T. D. (2007, July). *How do people learn science? Research in science education*. Invited lecture. Student Science Training Program, University of Florida. Gainesville, FL.
- Sadler, T. D. (2007, June). *Socioscientific issues: Making classroom science relevant*. Teacher workshop. Center for Precollegiate Education & Training Summer Science Institute: Exploration in Life Science, University of Florida. Gainesville, FL.
- Brownell, M., Griffin, C., Pape, S., & Sadler, T. D. (2007, March). *Mixed methods research*. Invited panel discussion. University of Florida College of Education, Gainesville, FL.
- Sadler, T. D. (2006, October). *Socioscientific reasoning: Pedagogical and research implications of an emerging construct*. Guest lecture. University of South Florida, Tampa, FL.
- Sadler, T. D. (2006, October). *Professionalism in the academy: Conferences & presentations*. Invited seminar. Student Association of Graduate Students in Education (SAGE), University of Florida, Gainesville, FL.
- Sadler, T. D. (2005, October). *Trends in science education research: Socioscientific issues, argumentation, and classroom issues*. Guest lecture. University of South Florida, Tampa, FL.
- Sadler, T. D. (2005, August). *Curriculum development for inquiry based science*. Workshop series. Science Education Training Program for Korean Primary School Teachers, Indiana University, Bloomington, IN
- Sadler, T. D. (2004, June). *Exploring the nature of science through "black boxes"*. Teacher workshop. Science EDUCATES program, Indiana University, Bloomington, IN.
- Sadler, T. D. (2003, October). *Preparing for a career in science education*. Guest lecture. Indiana University, Bloomington, IN.
- Sadler, T. D. (2003, June). *Application of the naturalistic paradigm and qualitative methods for issues in science education*. Guest lecture. University of South Florida, Tampa, FL.
- Sadler, T. D. (2002, April). *Socioscientific issue research and its relevance for classroom science learning experiences*. Guest lecture. University of South Florida, Tampa, FL. (ERIC Document Reproduction Service ED472101)

Sadler, T. D. (2002, February). *The implications of content area literacy: The case of scientific literacy*. Seminar presented to the Community of Scholars (graduate student organization in secondary education). University of South Florida, Tampa, FL.

MENTORING

Junior Faculty Members

Raj Darolia, Assistant Professor of Educational Policy, MU (2015-16)
Laura Zangori, Assistant Professor of Science Education, MU (2015-2017)
Benjamin Herman, Assistant Professor of Science Education, MU (2015-2017)

Post-doctoral Researchers

Li Ke (2018-present)
David Owens (2016-2018; faculty, Georgia Southern University)
Sasithev Pitipornatapin (2014-2015; faculty, Kasetsart University, Bangkok, Thailand)
Jennifer Eastwood (2010-2011; faculty, Oakland University Beaumont School of Medicine)

Doctoral Students – Committee Chair (or Co-chair*)

Eric Wulff* (2016-2019; assessment coordinator, Ball State University)
A.J. Womack (2016-2019; data analyst, Missouri Department of Health)
Amanda Peel* (2015-2019; postdoc, Northwestern University)
Tamara Hancock (2014-2018; faculty, University of Missouri)
Andrew Kinslow (2014-2018; teacher, Rock Bridge High School)
Hai Nguyen (2014-present)
Jaimie Foulk* (2014-present)
Suleyman Cite (2013-2017; faculty, Kastamonu University, Turkey)
Nurcan Cansiz* (2013-2014; faculty, Ataturk University, Turkey)
Deepika Menon (2012-2015; faculty, Towson University)
Stephen Burgin (2009-2012; faculty, University of Arkansas)
Fred Nelson (2007-2012; faculty, California State University, Fresno; *Recipient of the Delores A. Auzenne Dissertation Award*)
Mustafa Topcu* (2007-2008; faculty, Yuzuncu Yil University, Turkey. *Recipient of the Middle East Technical University, Graduate School of Social Sciences Best Dissertation Award*)
Michelle Klosterman (2006-2010; faculty, Wake Forest University)

Doctoral Students – Committee Member

Lenora Crabtree (2019-present)
Justin Sigoloff (2016-present)
Nikki Falk (2016-2019; postdoc, University of Illinois at Chicago)
Kathryn Arnone (2015-2017; educator, NASA Endeavor STEM Education Program)
Wanli Xing (2015-2016, faculty, Texas Tech University)
Shannon Burcks (2014-2019; instructor, University of Missouri)
Morgan Presley (2012-2015; faculty, Drury University)
Chris Murakami (2011-2015; faculty, Chatham University)
Carina Rebello (2011-2012; researcher, Kansas State University)

Parker Stuart (2011-2014; faculty, University of Central Missouri)
Julie Brown (2010-2014; faculty, University of Minnesota)
Samantha Fowler (2005-2009, faculty, Clayton State University)
Hasan Deniz (2005-2007; faculty, University of Nevada, Las Vegas)
Anna Lewis (2004-2008; faculty, University of South Florida St. Petersburg)
Mahsa Kazempour (2004-2008; faculty, Penn State University Berks)
Alandeom Oliveira (2003-2008; faculty, University of Albany)
Aidin Amirshokoochi (2003-2008; faculty, Fairfield University)
Meredith Beilfuss (2003-2004; faculty, Butler University)

Doctoral Students – External Reviewer

Timothy Pope (2014) – Curtin University
Anindito Aditomo (2012) – University of Sydney
Lea Segal (2007) – The Hebrew University of Jerusalem

Specialist Students – Committee Chair

Gina Ceylan (2011-2014) Tina Roberts (2012-2013)
Stephen Burgin (2006-2009)

Master’s Students – Primary Advisor

Jena Hanes (2004) Taryn Chaifetz (2004-2005)
Asma Khawaji (2004-2005) Katherine Long (2004-2005)

Undergraduate Students – Research Supervision

Kadarius Burgess (2016-2017) Olivia Myers (2014-2016)
Alison Hagen (2016) Jordan Henson (2014-2015)
Rachel Czech (2011-2012) Johnson Kung (2011)
Kendall Gibson (2010-2011) Rachel Griffin (2009-2010)
Jamie Mann (2008-2009) Alexis Rangel (2009-2010)
Erin McClary (2008) Kayla Pritchard (2008)
Erica Scully (2008) Ana Laura Martinez-Tapia (2008)

Visiting Scholars

Nilay Ozturk, Ph.D. Candidate, Middle Eastern Technical University, Turkey (2015-2016)
Mustafa Topcu, Associate Professor, Yildiz Technical University, Turkey (2014-2015)
Nurcan Cansiz, Ph.D. Candidate, Middle Eastern Technical University, Turkey (2012-2013)
Marcus Grace, Senior Lecturer, University of South Hampton, England (2012)
Sidnei Percia de Penha, Ph.D. Candidate, São Paulo University, Brazil (2012)
Julia Hostenbach, Ph.D. Candidate, University of Duisburg-Essen, Germany (2011)
Mustafa Topcu, Ph.D Candidate, Middle Eastern Technical University, Turkey (2007-2008)

UNIVERSITY COURSES TAUGHT

University of Missouri

LTC 8710: Nature of Science and Science Education (doctoral)
LTC 8714: Research in Science Education (doctoral)
LTC 8724/Bio 87224: College Science Teaching (graduate)

LTC 8900: Action Research for Preservice Science Teachers (graduate)
LTC 8900: Science Education PhD Orientation (doctoral)
LTC 8900: Grant Writing for Education Scholarship (doctoral)

University of Florida

SCE 4310: Elementary Science Methods for the Inclusive Classroom (undergraduate)
EDG 4930: Explorations of Science Teaching (undergraduate)
ESE 6344: Classroom Practices for Secondary Science (master's)
SCE 6947: Practicum in Secondary Science Teaching and Assessment (master's)
EDG 6931: Integrating Mathematics and Science Teaching (master's)
ESE 6945: Student Teaching in Secondary Science Settings (master's)
EDG 6226: Orientation to Research in Curriculum & Instruction (doctoral)
EDG 6931: Issue Based Science Instruction-Online (master's)
EDG 6931: Issues in Science Education (doctoral)
EDG 6931: Multiple Perspectives on Teaching & Learning (doctoral)

Indiana University

M411: Student Teaching Seminar for Science (undergraduate)
M446: Methods of Teaching High/Middle School Science (undergraduate)
Q506: Methods of Teaching High/ Middle School Science (master's)
M511: Student Teaching Seminar for Science (master's)
S518: Advanced Study of Teaching Secondary School Science (graduate)
Q590: Independent Study in Science Education (master's)
Q610: Science Education Curriculum (doctoral)
Q690: Independent Study in Science Education (doctoral)
J762: Methods of Teaching Secondary Science for Transition-to-Teach (graduate)

University of South Florida

SCE 4305: Communication Skills in Science (undergraduate)
SCE 4310: Teaching Elementary School Science (undergraduate)
SCE 4320: Teaching Methods for Middle Grades Science (undergraduate)
SCE 5937: Life Science Education (master's)
SCE 6616: Trends in Science Instruction (master's)

Harvard University

BS10: Foundations of Biological Diversity-Laboratory (undergraduate)
BS55: Ecology: Populations, Communities and Ecosystems-Discussion section
(undergraduate)

MEDIA REPORTS

“The truth can be hard to find” *Transform* (University of North Carolina School of Education magazine), Fall 2018.

“The socioscientific issues approach: Addressing controversial issue in the science classroom” *Lab Out Lab Podcast*, February 19, 2018.
<https://laboutloud.com/2018/02/episode-181-socioscientific-issues/>

- “What we learn from the edtech games the government plays” by Betsy Corcoran & Meg Hamel. *EdSurge*, January 10, 2018. <https://www.edsurge.com/news/2018-01-10-what-we-learn-from-the-edtech-games-the-government-plays>
- “Learning mathematics and science” *Columbia Morning with David Lile* (Radio discussion show—KFRU, Columbia, MO), July 31, 2013. http://www.kfru.com/page.php?page_id=271
- “Gaming knowledge” by Melissa McCartney. *Science* (Editor’s Choice), Vol. 340, p. 526. May 2013.
- “Science and math education” *Intersection* (Radio discussion show—KBIA, Columbia, MO), June 2012. <http://intersectkbia.weebly.com/index.html>
- “Mission Biotech: Video game brings important science concepts to life” *EdLife* (University of Missouri College of Education magazine), Summer 2012.

GRANT ADVISORY BOARDS & CONSULTING

- 2017-2019 *Transformation of an Introductory Science Course to Support Scientific Literacy*, University of Nebraska, National Science Foundation (PI: Jenny Dauer)
- 2017-2020 *Argulex - Applying Automated Analysis to a Learning Progression for Argumentation*, BSCS, National Science Foundation (PI: Christopher Wilson)
- 2015-2017 *Enhancing Pre-service Teachers’ Understanding and Practices of Socio-scientific Issues (SSIs)-based Teaching Using Online Mentoring Program*, Kasetsart University (Bangkok, Thailand), Thailand Research Fund (PI Sasi thep Pitiporntapin)
- 2014-2015 *Exploring STEM Using the Next Generation Science Standards*, Columbia Public Schools, Missouri Partnership for Educational Renewal (PI Meera Sood)
- 2013-2015 *Constructing and Critiquing Arguments in Middle School Science Classrooms: Supporting Teachers with Multimedia Educative Curriculum Materials*, Boston College & the Lawrence Hall of Science, National Science Foundation (PI Kate McNeill)
- 2013-2014 *Undergraduate Scientists: Measuring the Outcomes of Research Experiences from Multiple Perspectives*, Indiana University, National Science Foundation (PI: Adam Maltese)
- 2010-2012 *Provocative Questions Formative Evaluation and Exploration of Key Questions*, Museum of Science, Boston, National Science Foundation (PI: Larry Bell)
- 2010-2012 *Argument Driven Inquiry*, Florida State University, Institute for Educational Sciences (PI: Victor Sampson)
- 2010-2011 *UF Innovation through Institutional Integration*, University of Florida, National Science Foundation (PI: Bernard Machen)

SERVICE for JOURNALS & BOOK SERIES

American Educational Research Journal

2013 Reviewer
Canadian Journal for Science, Mathematics, and Technology Education
2012, 2014 Guest Reviewer

Chemistry Education Research and Practice
2013 Guest Reviewer

Contemporary Trends and Issues in Science Education (book series), Springer
2011- Editorial Board

Educational Psychologist
2014 Guest Reviewer

Florida Journal of Educational Research
2004 Guest Reviewer

Functional Plant Biology
2006 Guest Reviewer

Handbook of Research on Science Education
2013 Chapter Reviewer

Instructional Science
2010, 2014 Guest Reviewer

International Journal of Educational Research
2010 Guest Reviewer

International Journal of Designs for Learning
2015 Invited Reviewer

International Journal of Science and Mathematics Education
2008- Invited Reviewer

International Journal of Science Education
2005- Reviewer

Journal of Biological Education
2014 Guest Reviewer

Journal of Moral Education
2004-2005 Reviewer

Journal of Environmental Education
2017 Reviewer

Journal of Research in Science Teaching
2017-2018 Special Issue Guest Editor
2015-2019 Associate Editor
2006-2009 Editorial Review Board
2004-2013 Reviewer

Journal of Science Teacher Education

2006-2011 Editorial Review Board

2005, 2012 Guest Reviewer

Journal of Science Education and Technology

2012 Guest Reviewer

Journal of the Learning Sciences

2015 Guest Reviewer

KEDI Journal of Educational Policy

2010 Guest Reviewer

Research in Science Education

2007- Editorial Board

2006 Reviewer

Research in Science and Technology Education

2012-2013 Guest Reviewer

Science

2010 Guest Reviewer

Science & Education

2005-2008 Guest Co-editor, Special issue: *Social and ethical issues in science education* (Volume 17, issues 8-9)

2008-2010 Periodic Reviewer

Science Education

2010-2015 Section Editor, *The Books*

2010- Editorial Board

2006-2010 Review Board

2005 Special Reviewer

SERVICE for PROFESSIONAL ORGANIZATIONS

American Educational Research Association

2019 Division K Graduate Student Mentor

2018 Delegation Member for Capital Hill visits

2005, 2010, 2013-14 Conference Proposal Reviewer

Association for Science Teacher Education

2006-2008 Annual Meeting Thread Coordinator

European Science Education Research Association

2009, 2011 Conference Proposal Reviewer

Howard Hughes Medical Institute

2011, 2013-14 Science Education Proposal Reviewer

Institute of Education Sciences

2017-2019 Review Panel Member

International Conference of the Learning Sciences
2005 Conference Proposal Reviewer

Israel Science Foundation
2016 Independent expert for proposal review

National Association for Research in Science Teaching
2017-2019 Co-Chair, Early Career Research Award Committee
2016-2017 Member, Early Career Research Award Committee
2011-2012 Liaison to the National Science Teachers Association
2010 Co-chair, Ad hoc Committee to Review Science Standards
2008-2011 Member, Board of Directors
2008-2011 Chair, Research Committee
2006-2008 Member, Research Committee
2004-2007 Member, Dissertation Award Committee
2004-2007 Strand Co-coordinator
2002- Conference Proposal Reviewer

National Science Foundation, Directorate for Education and Human Resources
2017 Ad hoc Proposal Reviewer
2004, 2006, 2007, 2009, 2011, 2013, 2014, 2016, 2018 Panel Reviewer

National Science Teachers Association
2016 Reviewer, Position statement revisions
2010-2012 Alliance of Affiliates Leadership Council
2009-2012 Alliance of Affiliates Representative
2009-2010 Member, John Glenn Center for Science Education Task Force
2009-2010 Member, Science-Technology-Society Position Statement Task Force
Southeastern Association for the Education of Teachers in science
2001 Conference Co-coordinator

Swiss National Science Foundation
2007 Independent expert for proposal review

SERVICE for DEPARTMENT, COLLEGE & UNIVERSITY

University of North Carolina at Greensboro

2018-2019 Chair, Moss Street Partnership School Research Task Force
2018-2019 Co-Chair, Planning Committee for Establishment of an Institute for School Partnerships
2018 Chair, Search Committees for 1) Grant Writer, 2) Post-award Specialist, and 3) Post-doctoral Fellow
2017- Chair, School of Education Research Council
2017- Member, Academic Council (SOE)
2017- Member, Faculty Council (SOE)
2017- Member, Dean's Council (SOE)
2017- Member, Research Advisory Council

University of Missouri

2016-2017 Chair, Task Force for Faculty Workload Policy (LTC)
 2016-2017 Member, Sustainability Faculty Search Committee (College of Engineering)
 2016-2017 Institutional (MU) Representative, 100Kin10 STEM Teacher Initiative
 2016 Member, Task Force for Tenure and Promotion Guidelines (LTC)
 2015-2016 Member, English Education Search Committee
 2015 Ad hoc Member, Special Education Academic Personnel Committee
 2015-2017 Chair, Learning Teaching & Curriculum Academic Personnel Committee
 2014-2015 Chair, Science Education Search Committee
 2014-2015 Member, Richard G. Miller Endowed Chair in Mathematics Education Search Committee
 2014-2015 Member, Qualitative Inquiry Search Committee
 2014-2015 Member, e-Learning Innovation Center Task Force
 2014 Member, Research Inquiry Committee
 2014 Member, College of Education Doctoral Program Competencies Working Group
 2013-2016 Institutional (MU) Liaison, AAU Undergraduate STEM Education Initiative
 2012-2013 Member, Mizzou K-12 Online Director Search Committee
 2012-2015 Member, Minor in College Teaching Advisory Board
 2012-2015 Member, College of Education Promotion & Tenure Committee
 2012-2013 Chair, Sandra K. Abell Conversations about College Science Teaching Planning Committee
 2012 Scorer, Teaching Fellows action research projects
 2012 Judge, MU Undergraduate Research and Creative Achievements Forum
 2011-2012 Chair, Science Education Search Committee
 2011-2012 Member, Undergraduate Education Task Force—Division of Biological Sciences
 2011-2014 Member, MU CIRTL (Center for the Integration of Research, Teaching and Learning) Advisory Board
 2011- Member, Curriculum & Program Area Leaders Committee
 2011- Emphasis Area Leader, Science Education
 2011-2012 Member, Mathematics Education Faculty Search Committee
 2011-2012 Member, Sandra K. Abell Conversations about College Science Teaching Planning Committee

University of Florida

2011 Member, Faculty Advisory Committee for the COE Dean Search
 2010-2011 Member, Faculty Affairs Committee
 2010-2011 Chair, STEM Education Faculty Search Committee
 2010 Member, College of Education Associate Dean for Research Search Committee
 2009-2010 Member, Mathematics/Science Education Faculty Search Committee
 2009 Chair, STEM Grants Coordinator Search Committee
 2009-2011 Member, School of Teaching & Learning Advisory Committee
 2008-2010 Member, Faculty Policy Council
 2007-2008 Member, Mathematics Education Faculty Search Committee
 2008 Member, Faculty Policy Council Elections Committee
 2007-2010 Member, Research Advisory Committee
 2006-2007 Member, Middle/Secondary Education Faculty Search Committee

- 2006-2008 Advisor, Preview (University-wide orientation & advisement program)
- 2005-2010 Advisor, Elementary PROTEACH Program, math/science specializations
- 2005-2007 Member, Graduate Studies Committee

Indiana University

- 2005 Coordinator, Science Education Research Symposium
- 2004-2005 Member, E. Wayne Gross Scholarship Committee
- 2003-2005 Coordinator, Secondary Science Education Program
- 2003-2005 Member, Secondary Education Council

SERVICE for COMMUNITY

- 2017 Community Advisory Board for Elementary Mathematics Curriculum, Columbia Public Schools
- 2014-2015 Advisory Board Member, Benton STEM Elementary School
- 2005, 2007 Science Fair Judge, Alachua County Schools: Evaluated middle school science fair projects.
- 2004-2006 Facilitator, Project WILD: Organized and administered Project WILD workshops designed to introduce pre-service teachers to curriculum which focuses on environmental education and wildlife conservation.
- 2004 Instructor, Upward Bound: Taught sections of biology and physics to high school students participating in a six week summer program to promote academic achievement among students who will become their families' first generation of college students.
- 2004-2005 Board Member, Hilltop Educational Foundation Board of Directors: This board serves an advisory role for the Hilltop Garden and Nature Center, which seeks to promote organic and native gardening, community education, and opportunities for youth to experience gardening and nature.

CONSULTING

- 2012 National Science Teachers Association: Reviewed book prospectus
- 2012 Institute of Play: Reviewed materials for technology based assessments of 21st century skills and socio-scientific reasoning
- 2010-2014 Educational Testing Service: Served as a member of the Standing Committee for the development of the NAEP Technology and Engineering Literacy Assessment
- 2008, 2009 SAGE Publications, Inc.: Reviewed chapters for new book manuscripts.
- 2006 Teachers College Press: Reviewed book prospectus.
- 2005 Panhandle Area Educational Consortium: Supported development of a professional training video for school administrators regarding current themes in science education.

PROFESSIONAL AFFILIATIONS (Past & Present)

American Association for the Advancement of Science (AAAS)

American Education Research Association (AERA)

Division C: Learning & Instruction

Science Teaching & Learning SIG

Mixed Methods Research SIG

Association for Science Teacher Education (ASTE)

European Science Education Research Association (ESERA)

Hoosier Association of Science Teachers, Inc. (HASTI)

International Society of the Learning Sciences (ISLS)

National Association for Research in Science Teaching (NARST)

National Association of Biology Teachers (NABT)

National Science Education Leadership Association (NSELA)

National Science Teachers Association (NSTA)

North Carolina Science Teachers Association (NCSTA)

Science Teachers of Missouri (STOM)

Southeastern Association for Science Teacher Education (SASTE)